VOL 82 NO. 3

textile bulletin

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Sectional INDEX

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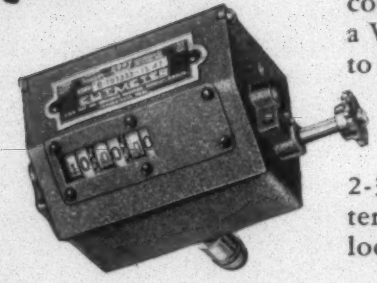
In Spinning...

New Veeder-Root 2-3-4 Convertible Hank Counters are easier to read, reset and maintain. And they are built to give you years of accurate facts-in-figures that help toward closer production *Count*rol.

Weaving...



Here's the combination to count on . . . *on every loom* . . . a Veeder-Root Cut Meter (left) to light a light or stop the loom at a pre-set woven yardage, *assuring uniform cuts of cloth* . . . and a new Veeder-Root 2-3-4 Convertible Pick Counter to keep accurate count of loom production on each shift.

Knitting...

For any type of knitting machine, Veeder-Root makes the counters you need to control your production. These new Revolution Counters, with the same advantages as the new 2-3-4 Convertible Hank and Pick Counters, can also be geared to record racks, or racks and tenths. In Fact, In Any Department of Any Type of Textile Mill . . .

VEEDER-ROOT

IS "THE NAME THAT COUNTS"

HARTFORD 2, CONN. GREENVILLE, S. C.

NEW DESIGN FEATURES

In Draper All-Steel Top Drive Anti-Friction Spindles Permit

BETTER SPINNING AT LOWER COST

New concave collar and washer design makes "plumbing" easier and faster. Spindle slippage is reduced to a minimum.

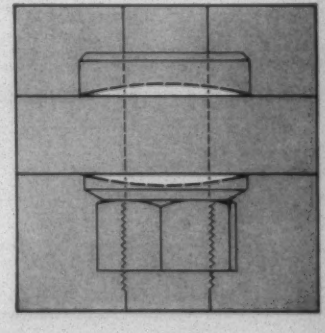
New welded construction eliminates possibility of doffer guards becoming loose.

Incorporated whorl design permits easy removal of waste yarns when doffing and simplifies manual braking. Bolster life, spindle speeds and quality of yarn are all increased.

Power requirements, lubrication cycle, blade vibration and ends down are all reduced.

In addition . . . it's an accepted fact that Draper *conforming fit* maintains a more *even* bobbin line *than any other Top Drive.*

Let a Draper spindle specialist analyze your spindle needs today.



Concave collar and washer design makes "plumbing" easier and faster.

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

Check eyebrows . . . Raise Yarn Uniformity up to 10%

with DAYCO Cots / Long Draft Aprons

One easy, intelligent decision will increase yarn quality up to 10% in your mill and eliminate the major cause of costly, wasteful eyebrowing. Install the amazing Dayco spinning combination—Dayco Cots and Dayco Long Draft Aprons.

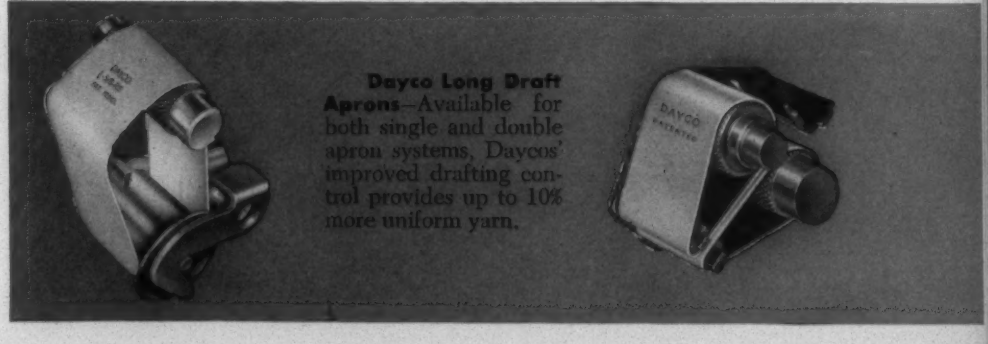
Dayco Cots contain IBC, the exclusive Dayton ingredient which gives Daycos the precise co-efficient of friction to draw yarn smoothly, leaving the long staple fibers in the yarn. Result: substantially increased quality—*and* increased production when less time is lost due to eyebrow-caused lap-ups and ends down.

Because IBC retards glazing of the durable, cushioning Dayco surface, that doesn't pit or groove, buffing and replacement costs go way down.

Dayco Long Draft Aprons installed on your spinning frame will give you up to 10% more uniform yarn. Precision-built to .004 tolerance Daycos give constant, unvarying control of the yarn in the drafting area.

With a strong, pliable, cord body Daycos won't stretch or take a permanent set, so Monday-morning starts are free from flipped or broken aprons. Unaffected by temperature, humidity or hard ends, Daycos won't curl, become sticky or groove.

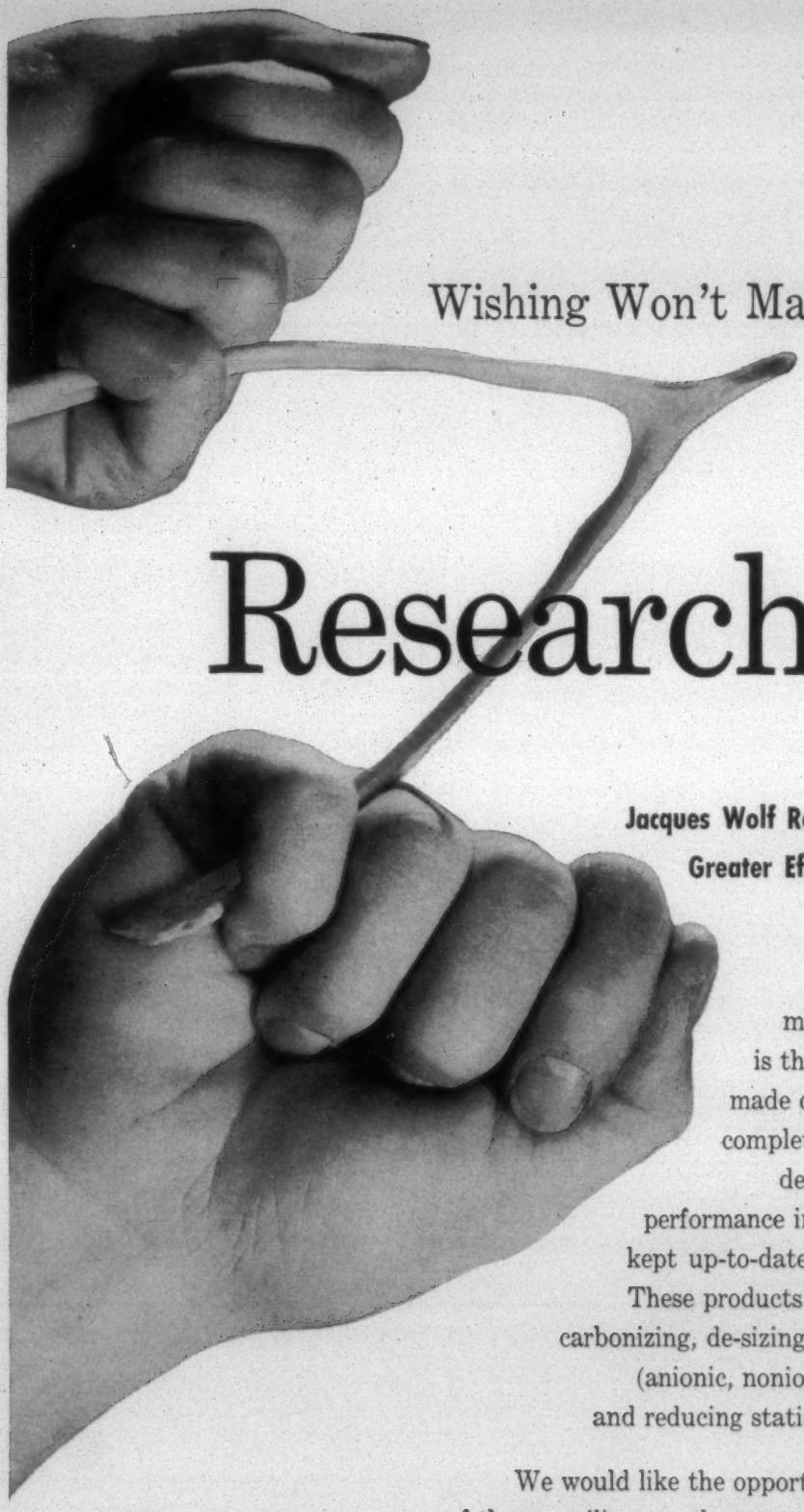
Make a test of Dayco's quality producing, cost reducing spinning combination—Dayco Cots and Dayco Long Draft Aprons. For information write Dayton Rubber Company, Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.



Dayco Long Draft Aprons—Available for both single and double apron systems, Daycos' improved drafting control provides up to 10% more uniform yarn.

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for Better Spinning and Weaving



Wishing Won't Make It So...

Research Will!

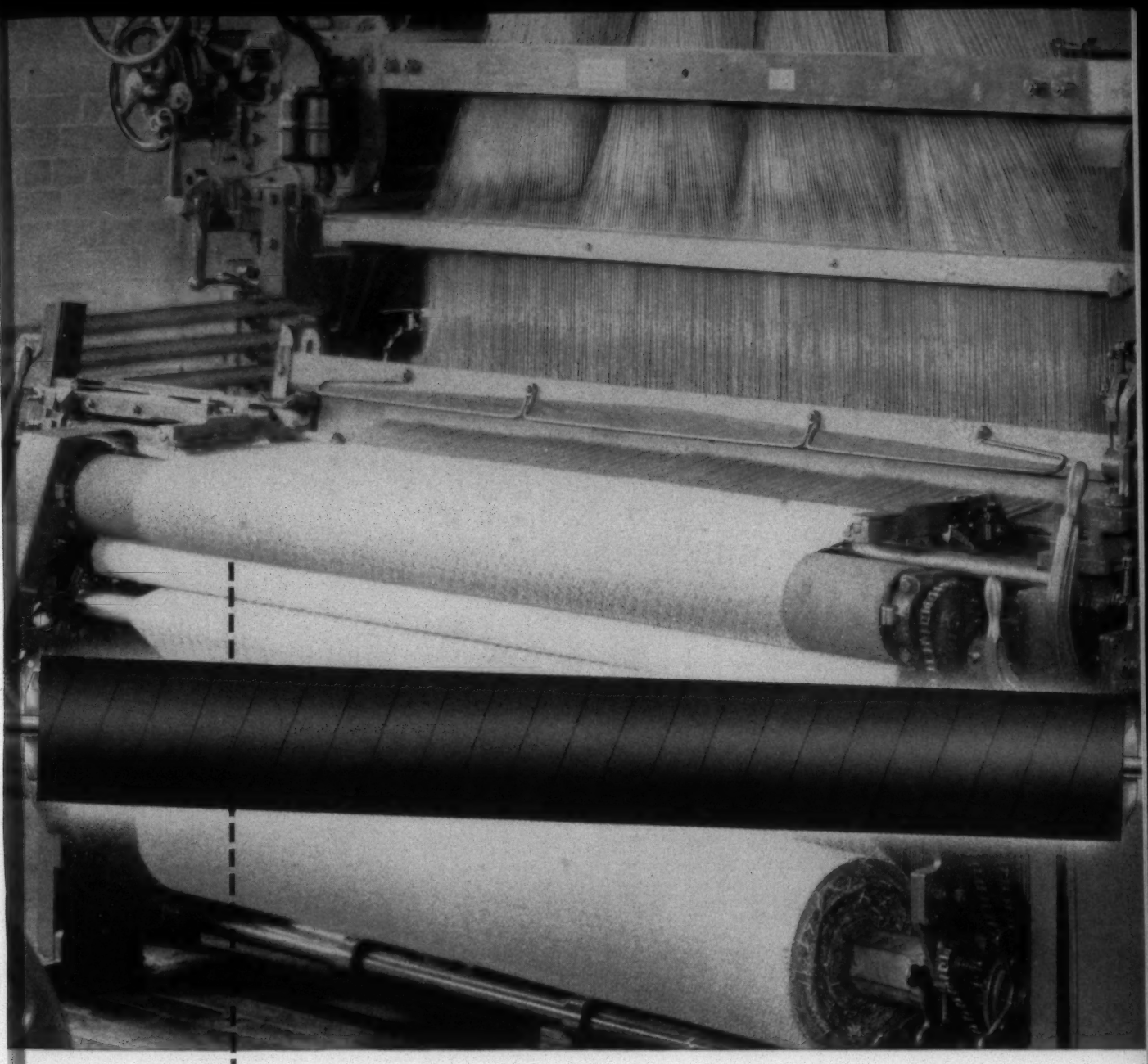
Jacques Wolf Research Laboratories Provide Greater Efficiency in Textile Processing

No, wishing for better processing methods won't make them a reality. *Research* is the stuff that such dreams are made of. Jacques Wolf & Co. has a complete line of auxiliary products, designed specifically for better performance in textile processing, that are kept up-to-date through constant research. These products provide greater efficiency in carbonizing, de-sizing, water repellency, deterging (anionic, nonionic and cationic), inhibiting, and reducing static properties on textile fibers.

We would like the opportunity of submitting samples of these auxiliary products to you. Call on us today!

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.



Non-marking roll covering delivers high take-up tension

Armstrong NO-732 Take-Up Roll Covering gives you non-marking smoothness plus high frictional grip because it's made of an unusual synthetic rubber compound.

This compound has an even, finely textured surface that handles all kinds of cloth—without the slightest danger of marking. Yet this same compound has just the right surface friction to give uniform take-up tension from selvage to selvage. In fact, the remarkable NO-732 Covering has up to twice the holding power you'd normally expect from synthetic rubber!

It's easy to test NO-732's firm grip—and non-marking smoothness. Just rub a sample over the cloth you weave. See how it "grabs" with little pressure. Then *feel* NO-732's even surface and you'll know why it won't mark fabrics.

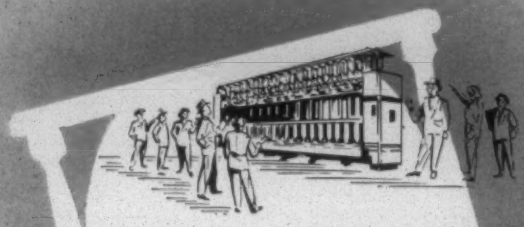
A sturdy fabric backing gives the NO-732 Covering extra strength, good adhesion to the roll. And like all Armstrong Loom Supplies, this covering is designed to give years of dependable service. Your Armstrong man will be glad to help you set up a loom test of NO-732.

For the booklet, "Armstrong Textile Roll Coverings and Mill Supplies," write Armstrong Cork Company, Industrial Division, 6903 Davis Avenue, Lancaster, Penna.

Armstrong LOOM SUPPLIES

... used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS • PRESS ROLL COVERING • TEMPLE ROLL COVERINGS
LOOM BRAKE AND LET-OFF STRIPS



In 1952

SACO-LOWELL *Introduced the* **GWALTNEY SPINNING FRAME** — *the only revolutionary spinning improvement in 100 years*

NOW IN 1956

OVER 356,000 SPINDLES OF SACO-LOWELL GWALTNEY SPINNING ARE IN DAILY OPERATION —

A major step in the automation program of those mills

Gwaltney Spinning Frames have demonstrated beyond any doubt their ability to produce yarns that are stronger, far more even, and of higher grade than the same count yarn produced from the same stock with conventional spinning — and this improved quality has been produced at considerably lower operating costs and resultant higher profit.

The superiority of Gwaltney Spinning is achieved through a combination of many developments including

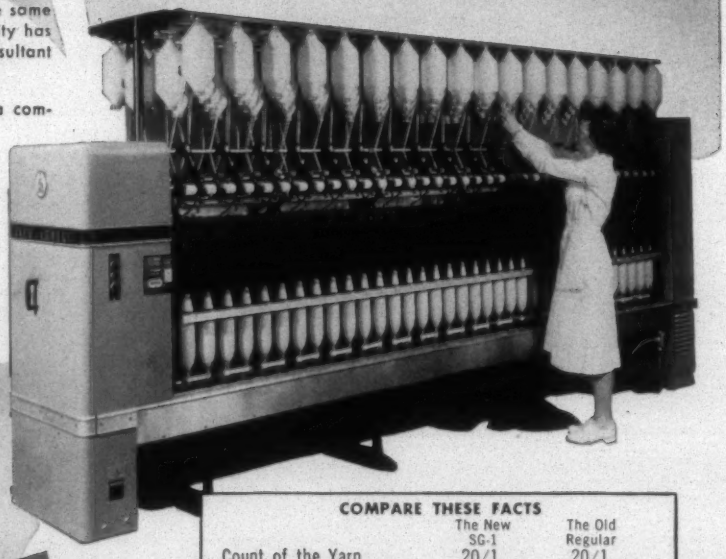
- Balloon controls
- Practically uniform tension at all stages of the doff, regardless of bobbin size and ring rail position Plus, many other special features

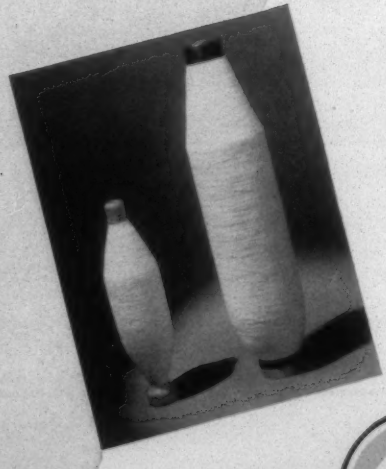
Saco-Lowell Gwaltney Spinning Frames can be successfully used for processing all of the current commercially used fibres: cotton, wool, synthetics and blends.

They can be equipped with Shaw Drafting element, Duo Roth, Standard Gwaltney, SS-4G or Z-6.

The purchase of Gwaltney Spinning is an "investment in progress" that pays off in higher profits and top quality.

A Saco-Lowell engineer will be glad to give you full details, or, arrange a demonstration.





COMPARE THESE FACTS

	The New SG-1	The Old Regular
Count of the Yarn	20/1	20/1
Length of Yarn Traverse	10.62"	5.88"
Ring Size	3.0"	2.0"
Weight of Yarn on Bobbin	12 oz.	3.2 oz.
Yards of Yarn on Bobbin	12,600	3,360
Unwinding Time at 500 yds./M	25.2 Min.	6.72 Min.
Bobbins creeled per Spindle per Hr. at Winder	2.39	8.93
Spindle Speed	7,920	7,920
Traveler Speed	6,220 Ft./M	4,146 Ft./M
Speed of 1" Front Roll	170 R.P.M.	170 R.P.M.
100% Production per Spindle per Hr.	.053 Lbs.	.053 Lbs.
Turns per Inch of Twist	14.9	14.9
Doffing Cycle	14.73 Hrs.	4.14 Hrs.
Estimated Efficiency	96.1	91.2
Net Production per Spindle Per Hr.	.0509 Lbs.	.0483 Lbs.
Increase for SG-1	5.4%	.....

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

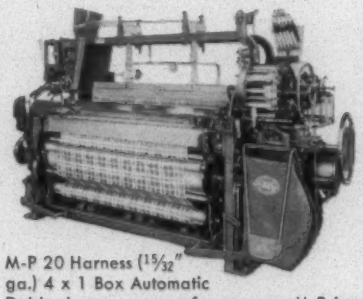
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

You can "turn on a dime"... any time!... and SCORE... when you're backed up by C&K's New M-P Line

You're always a tough and ready competitor, when your weaveroom has the Most Protection you can give it . . . and that means these all-new Multi-Purpose Looms. Every loom in this line is built on the same basic frame, and can be converted overnight to practically *any* fabric construction or color combination dictated by fashion . . . *from plain to fancy or back again.*

In addition, the M-P line makes other important contributions to Mill Profits . . . better fabric quality . . . increased work assignments . . . increased production (speed x efficiency) . . . and lower maintenance. See C & K today.



M-P 20 Harness (15/32" ga.) 4 x 1 Box Automatic Dobby Loom . . . one of many new M-P Looms . . . *all built on the same basic frame*

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

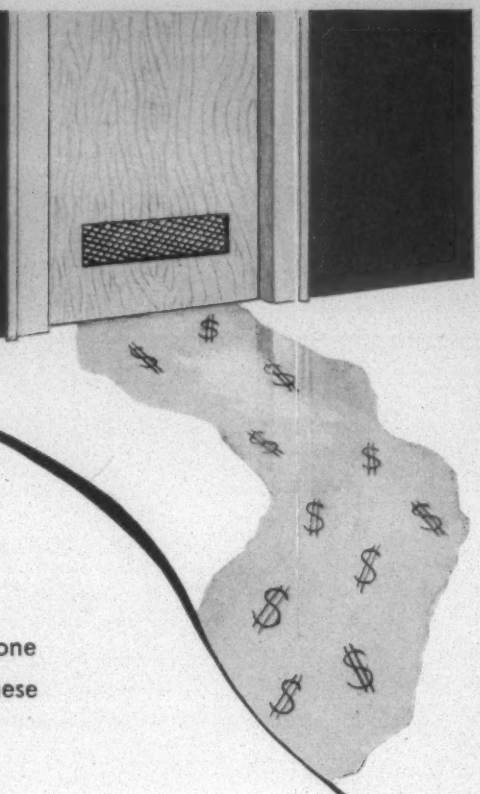
CROMPTON & KNOWLES *Loom works*

WORCESTER 1, MASSACHUSETTS, U.S.A.

CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada Limited, Montreal, Quebec

WASH OUT WASHROOM WASTE!

with these MONEY-SAVING PRODUCTS From HENLEY

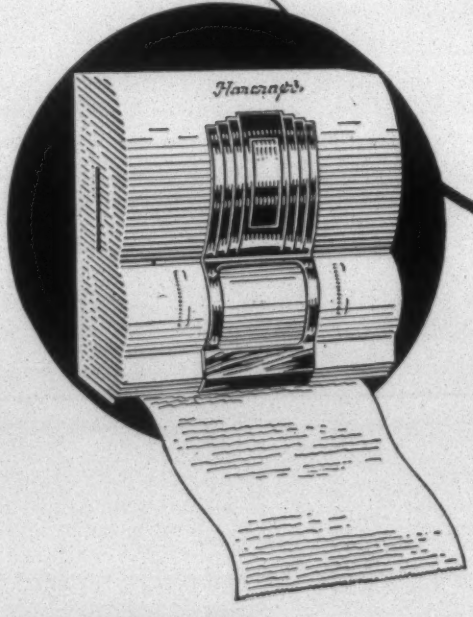


HARCRAFT
PAPER TOWEL DISPENSER

This highly efficient cabinet delivers only one strong, highly absorbent towel at a time with these features —

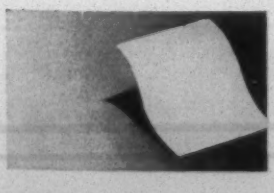
1. **Cuts Towel Consumption Up To 46%**
2. **Reduces Janitor Service 25%**
3. **Stops Towel Waste**
4. **Assures Washroom Sanitation and Neatness**

Well over 100,000 installations are in use every day of the year. One demonstration will convince you.



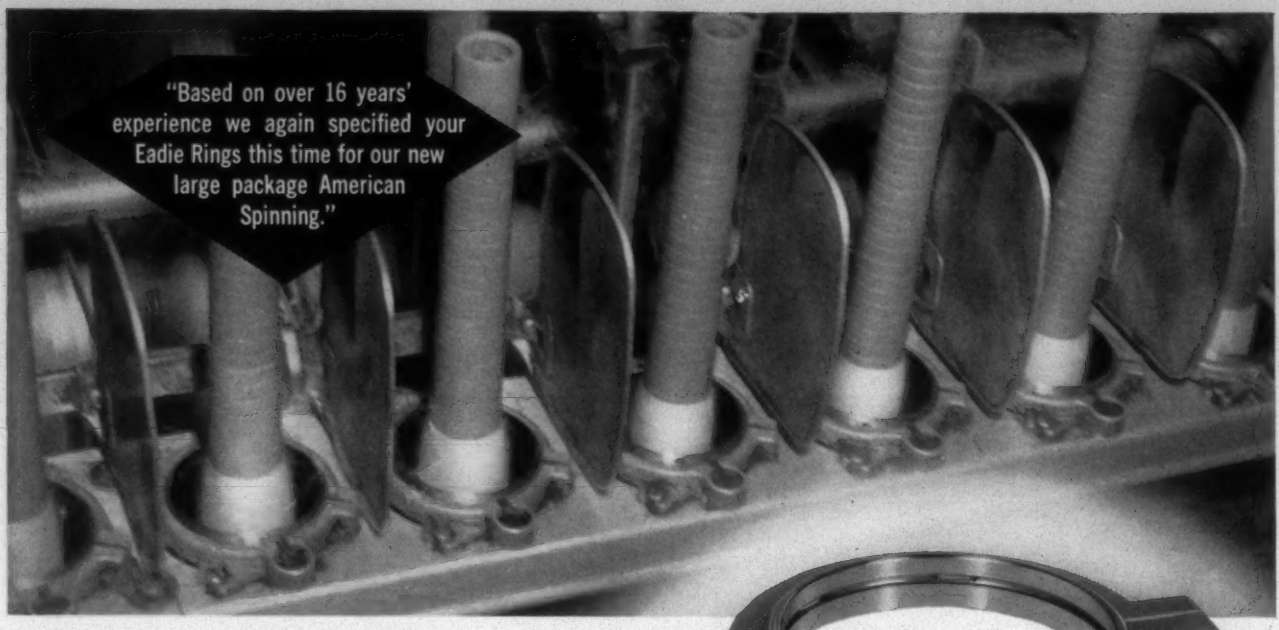
FOR MAXIMUM SAVINGS — Order *all* of your washroom supplies from Henley. Complete stocks of these fine products are always ready for quick delivery:

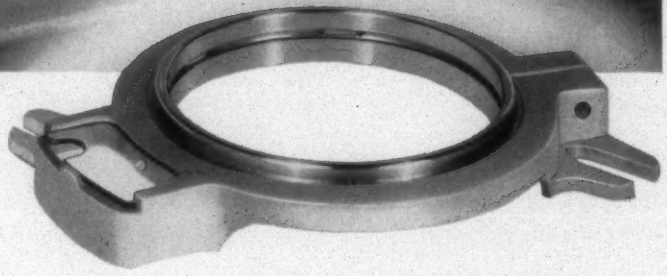
BORAXO AND LURON SOAPS
TOILET TISSUE
SEAT COVERS



HENLEY PAPER COMPANY

HIGH POINT 125 South Hamilton St. • CHARLOTTE 1900 South Boulevard • GASTONIA 400 West Main St. • ASHEVILLE 745 Biltmore Ave. • ATLANTA 10 Produce Row, S.W.





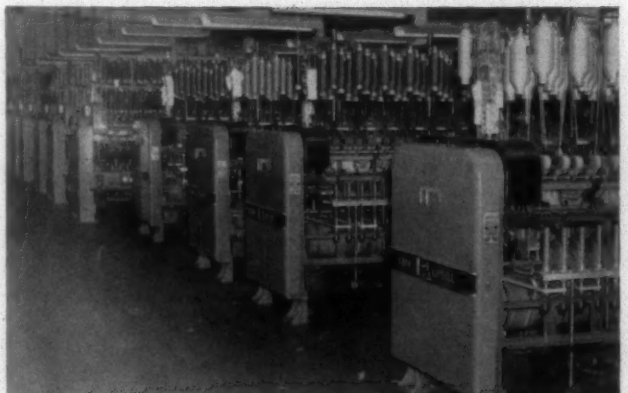
LEADING WORSTED SPINNER SAYS:

"Have found your Eadie lubricated rings eminently satisfactory"

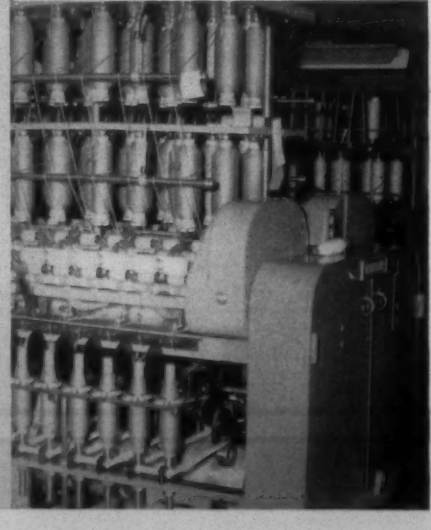
— J. H. STURSBERG, PRESIDENT
THE LIVINGSTON WORSTED MILLS, INC.
HOLYOKE, MASSACHUSETTS

"We have been running Whitinsville rings for more than 16 years and we have found them eminently satisfactory. In fact when we recently put in our modern large package American spinning, we specified Eadie laced rings". Such user statements as this attest the ability of DIAMOND FINISH rings to deliver superior quality and volume of production CONSISTENTLY THROUGHOUT THE YEARS. Other uses are: wool spinning, and twisting, worsted twisting, cotton twisting, and twisting of synthetic and glass yarns.

Describe your problem and we'll offer suggestions.



Saco-Lowell Worsted Spinning equipped with DIAMOND FINISH Eadie rings



Whitin large package American spinning equipped with DIAMOND FINISH Eadie rings

WHITINSVILLE (MASS.) SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas: W. K. SHIRLEY, 25 Oak St., Belmont, N. C.
Rep. for Ala., Ga., & Tenn: H. M. JACKSON, 216 Longview Dr., Jefferson, Ga.

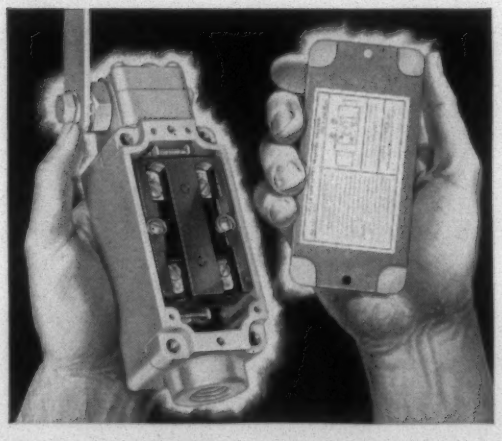
The new Cutler-Hammer 10252 Shipper Rod Switch provides every feature the textile industry wants. It's *fully* lint tight. It's *amazingly* compact. It's *really* versatile . . . and here's why.

LINT TIGHT—Lint, the big enemy of textile machines and control, is locked out of the 10252. Check these features of construction: 1. heavy die cast enclosure; 2. threaded conduit opening; 3. external mounting holes; and 4. heavy gasketed cover.

COMPACT—Small enough to fit in the palm of your hand, but big in performance. Large heavy duty butt type contacts and a sturdy mechanical mechanism assures years of dependable economical operation. Isolation of the electrical and mechanical mechanisms prevent the wires from "jamming" the switch mechanism.

VERSATILE—The 10252's mounting versatility cuts installation costs to a minimum. Here is a shipper rod switch which you can mount in any position, rotate the lever head to the correct motion plane, select either clockwise or counter-clockwise lever action without altering the switch mechanism, and accurately position the lever for precise operator "feel" and "pin-point" jogging.

The unique double contact design provides both positive motor starting and low voltage protection. The snap action closing of the first contact starts the motor. The second contact is pneumatically delayed to open to provide the low voltage protection. The delay period allows the motor starter interlock to pick up and maintain the circuit. Order your new C-H 10252 Shipper Rod Switch from your Authorized Cutler-Hammer Distributor today. CUTLER-HAMMER, Inc., 1455 St. Paul Avenue, Milwaukee 1, Wisconsin.



The perfect shipper rod switch *for roving frames—drawing frames—combers—narrow fabric looms—carpet looms.*

CUTLER-HAMMER
MOTOR CONTROL
C-H

WHAT'S NEW IN MOTOR CONTROL? ★ ★ ★ GET IT *FIRST* IN CUTLER-HAMMER

Have you an Ozone-Fading Problem?

Then it's time you started thinking about using HARTOFUMES . . . a must for the prevention of ozone-fading with the new gas-fast dyes. HARTOFUMES are the most economical gas-fading inhibitors for normal acetate dyeings on the market today.

HARTOFUME C—An emulsifiable liquid offering minimum yellowing and permanent protection.

HARTOFUME N – A durable inhibitor, also used as a topping agent for the permanent HARTOFUMES to give 3-cycle protection.

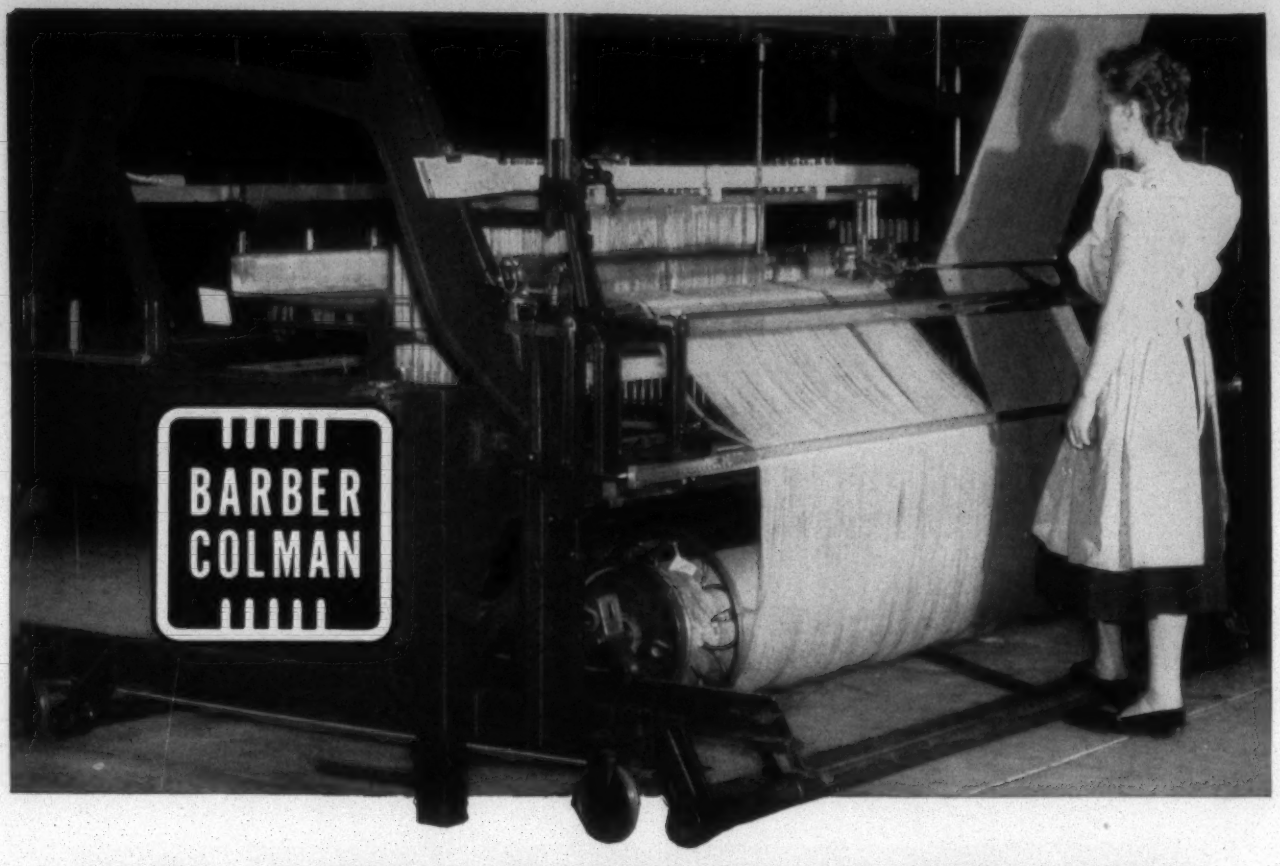
HART PRODUCTS — BASED ON RESEARCH

the Hart Products Corporation

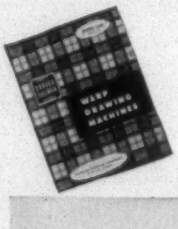
1440 BROADWAY, NEW YORK 18, N. Y.

Works and Laboratories, Jersey City, N. J.

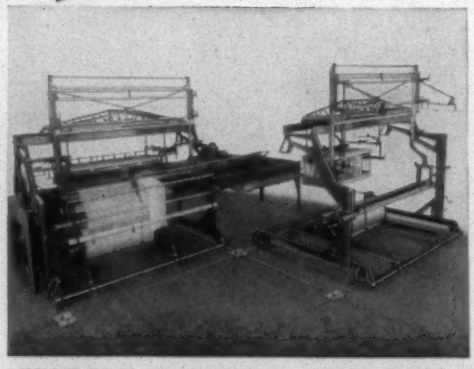
Hart Products Company of Canada, Ltd., Guelph, Ontario



WARP DRAWING MACHINE DRAWS DROP WIRES, HEDDLES, AND REED IN ONE OPERATION



Write for new
USERS LIST



On a Barber-Colman Warp Drawing Machine, at each stroke of the needle a thread is drawn through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately and automatically for each pick by a sequence of mechanical motions controlled by a pattern strip punched in accordance with the designer's draft. Users of the machine are enthusiastic, saying such things as "pays for itself in two years", "gets samples on the loom quickly", "high sley satin warps drawn in 5½ hours instead of 48 hours", "makes style changes rapidly", "saving more than $22 per warp", and the like. Let your Barber-Colman representative look into *your* situation — perhaps he can suggest an installation that could increase production, improve the products, and lower costs.

USE BARBER-COLMAN INSPECTION AND SERVICE

For *all* your Barber-Colman machines, be sure to call on the Service Department of your nearest Barber-Colman office. The men who staff this organization are specially trained and equipped, with a wealth of experience in checking, maintaining, repairing, and modernizing all types and models of Barber-Colman equipment. They are backed by alert main and branch offices who see that they are supplied with complete and reliable parts and information.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Manchester 1, England

PAKISTAN
Associated Agencies (M'cr.) Ltd.
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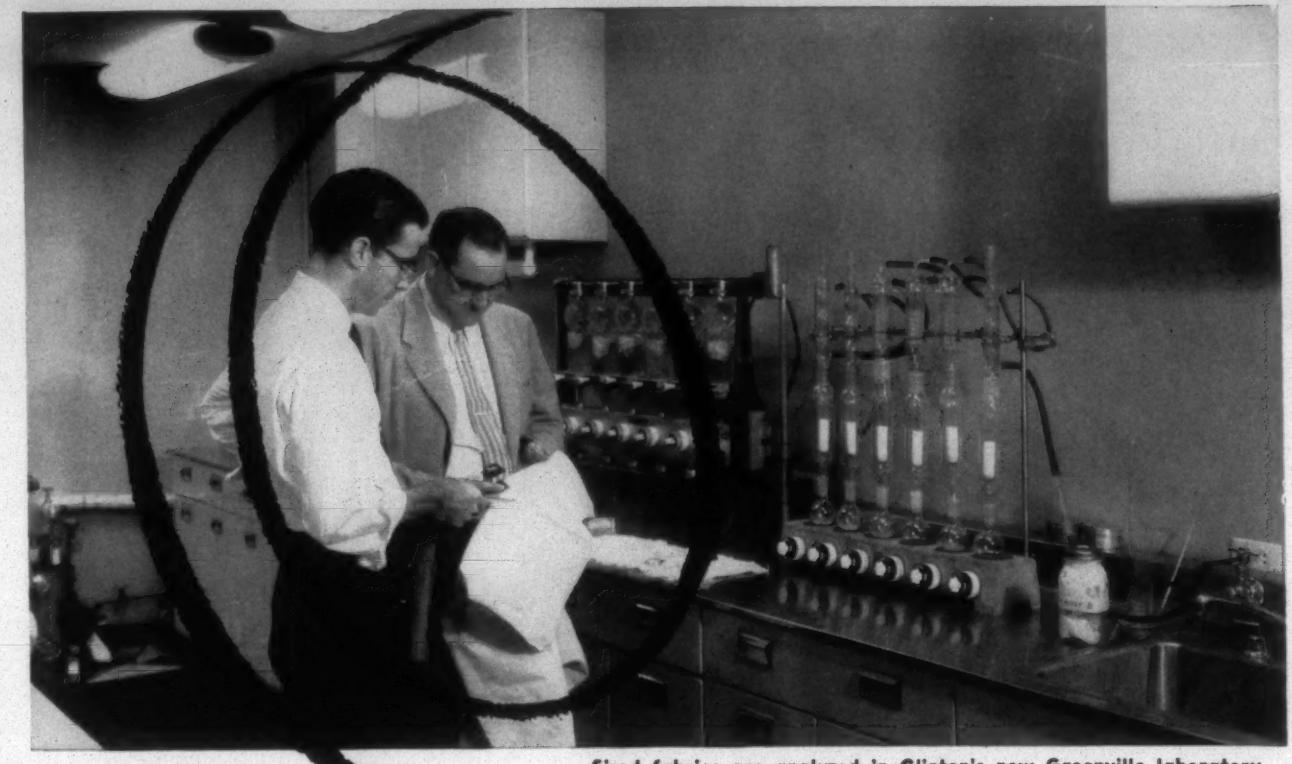
Napier Road
Karachi 2, Pakistan



Sized fabrics are analyzed in Clinton's new Greenville laboratory

to serve you better

Now textile industry technicians may obtain counsel regarding their sizing problems, needs and processes with new convenience and speed. With the opening of Clinton's new Greenville, S. C., laboratory facilities, some of the most modern scientific and technical equipment in the entire South is at your disposal.

This Clinton expansion emphasizes the importance placed on *serving* the textile industry. Because of this *service* approach to their needs, many mills have, for years, made it a standard practice to use Clinton starches in their warp sizing and finishing operations.

Visit this new Clinton laboratory soon, won't you? No obligation — and you'll profit by getting acquainted with this new facility. Remember — it's set up *to serve* YOU.

Quality products

FROM THE WORLD'S CORN CENTER

. . . and remember technical service in connection with your specific problems is available upon request

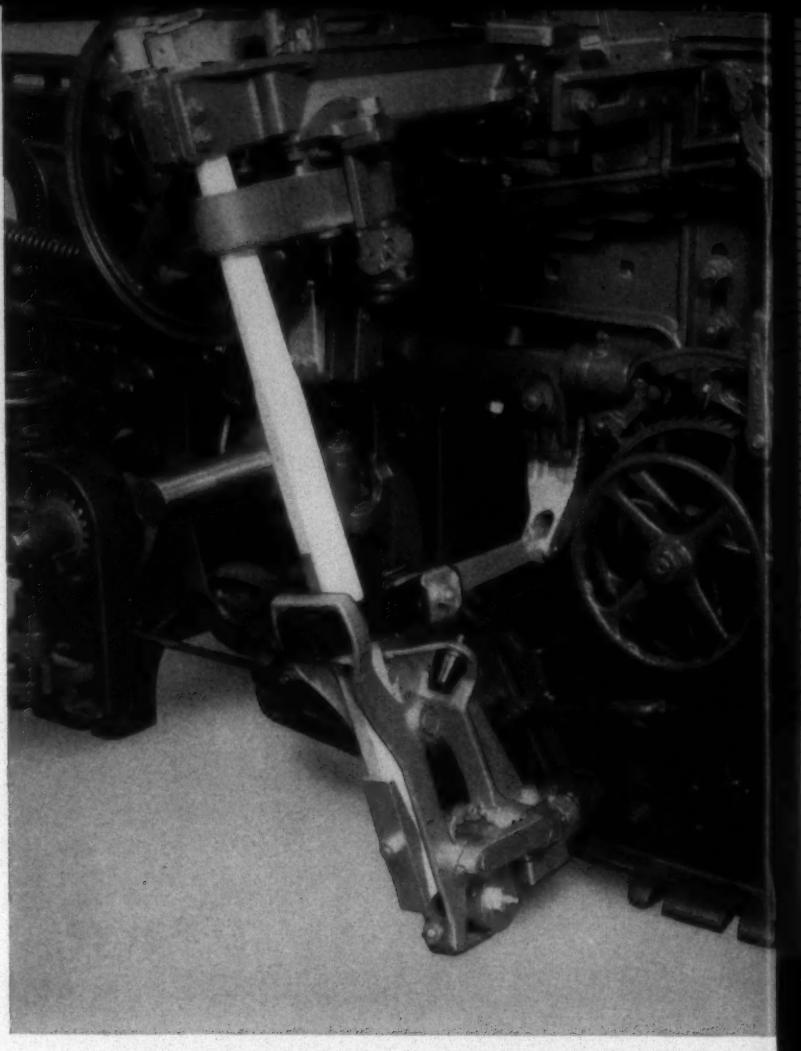
CLINTON

CLINTON FOODS INC.
Corn Processing Division
CLINTON, IOWA

NEW DRAPER LINKAGE PARALLEL ASSEMBLY

IMPROVES LOOM OPERATION

CUTS MAINTENANCE COST



Extensive mill trials prove the Draper Linkage Parallel Assembly results in a more uniform, controlled picking action. This parallel assembly eliminates "jump" and "play" in the picker stick . . . improves overall loom operation and reduces wear on pick motion and parallel parts.

A fixed power block position allows more uniform power settings to be maintained. Clamp-fit of the assembly on the rocker shaft permits easy, fast application. *Picker sticks may be replaced without altering Parallel settings.*

For complete details on this *cost* and *labor-saving mechanism,* contact your nearest Draper representative or write:

New aluminum pick arm and lug strap connection is recommended for above installation.

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

for high speed wetting and rewetting

nekal *ws-21*

The new **Nekal WS-21** is designed to give maximum efficiency for both wetting and rewetting at all temperatures. What's more, this liquid form chemical has a pleasant odor and controlled foaming qualities.

Nekal WS-21, the Wetting Agent, will produce excellent results in such operations as:

★ High speed continuous dyeing.
★ Package and beam machine processing.
★ Resin finishing, sizing, desizing and bleaching.
★ Wetting in jigs, padders, reel machines and open tubs.

Nekal WS-21, the Rewetting Agent, makes textiles highly absorbent. It is used:

★ To give rewetting in sanforizing.
★ For rewetting prior to dyeing and printing.
★ For finishing purposes on cellulosic and animal fibers.

If a highly concentrated product is preferred, use **Nekal WS-25,** a liquid brand three times the strength of **Nekal WS-21.**

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Take The Greatest Step Toward That Goal By Using Stehedco DRAWTEX HARNESS

- **Stehedco Drawtex Heddles and Frames are revolutionizing the textile industry with their efficient, trouble-free performance.**
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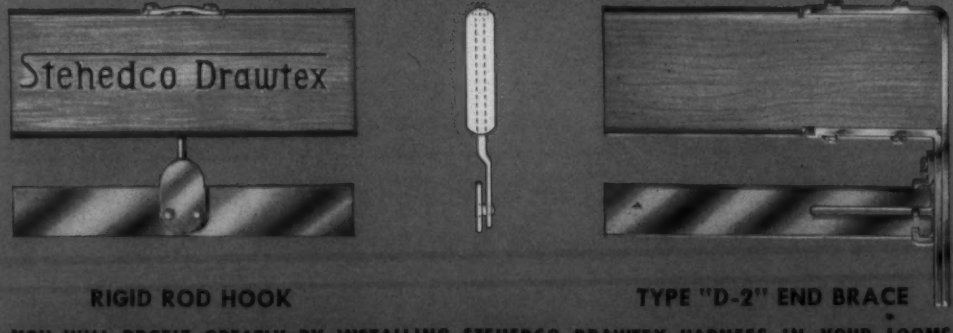
Frames are made of select fir lumber, straight and knot free. The new type D-2 end brace rigidly clamps the heddle rods so that there is no wear on either the brace or the rods, and yet the rods may easily be removed by slight pressure of a screwdriver to add or remove heddles.

The new rigid rod hook eliminates wear and need for replacement, and is easily adjusted with a screwdriver. It eliminates all warp streaks caused by the bunching of heddles at conventional type rod supports.



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TYPE "D-2" END BRACE

YOU WILL PROFIT GREATLY BY INSTALLING STEHEDCO DRAWTEX HARNESS IN YOUR LOOMS

Ask our Field Engineers for Samples and additional Information about this Revolutionary Type of Harness.

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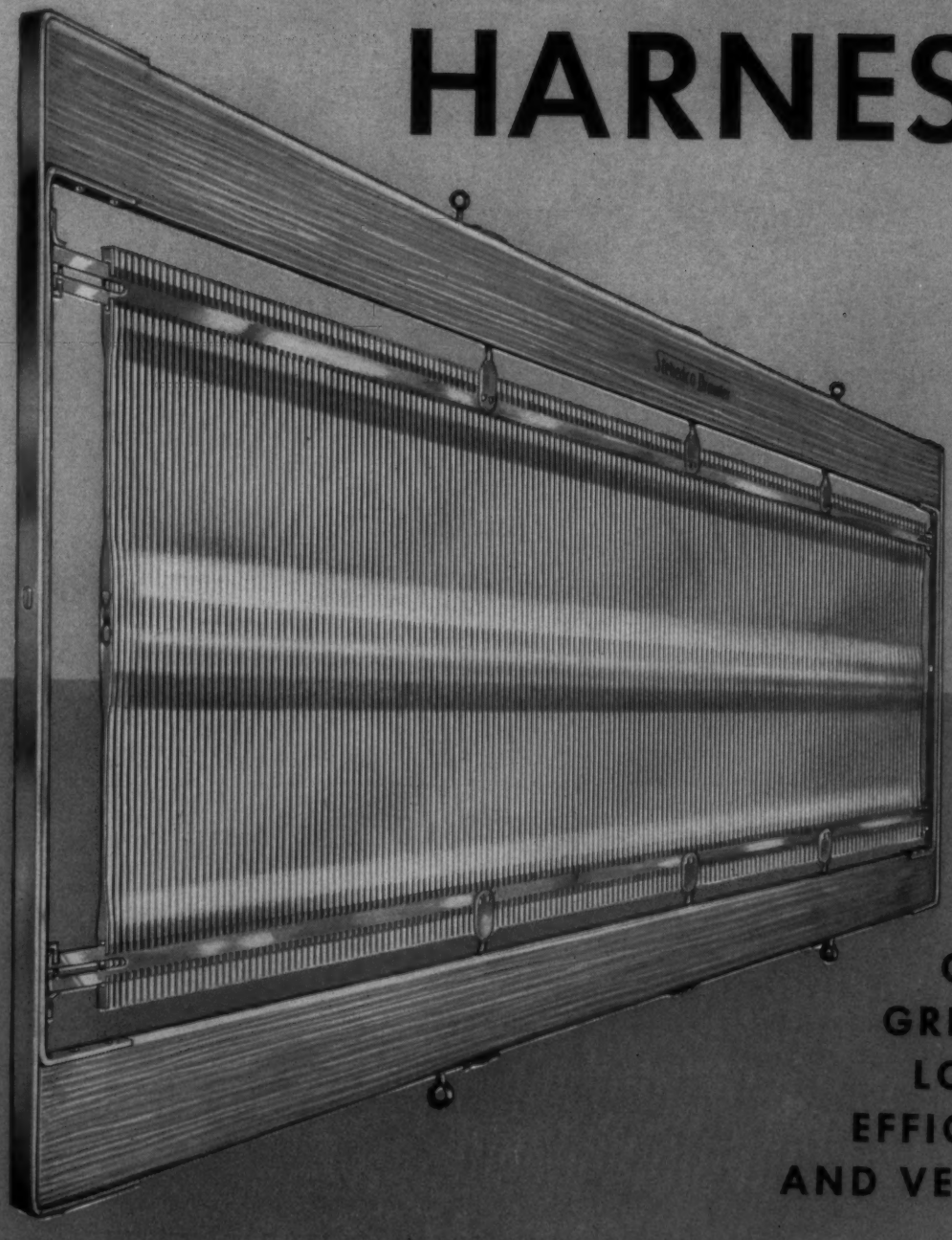

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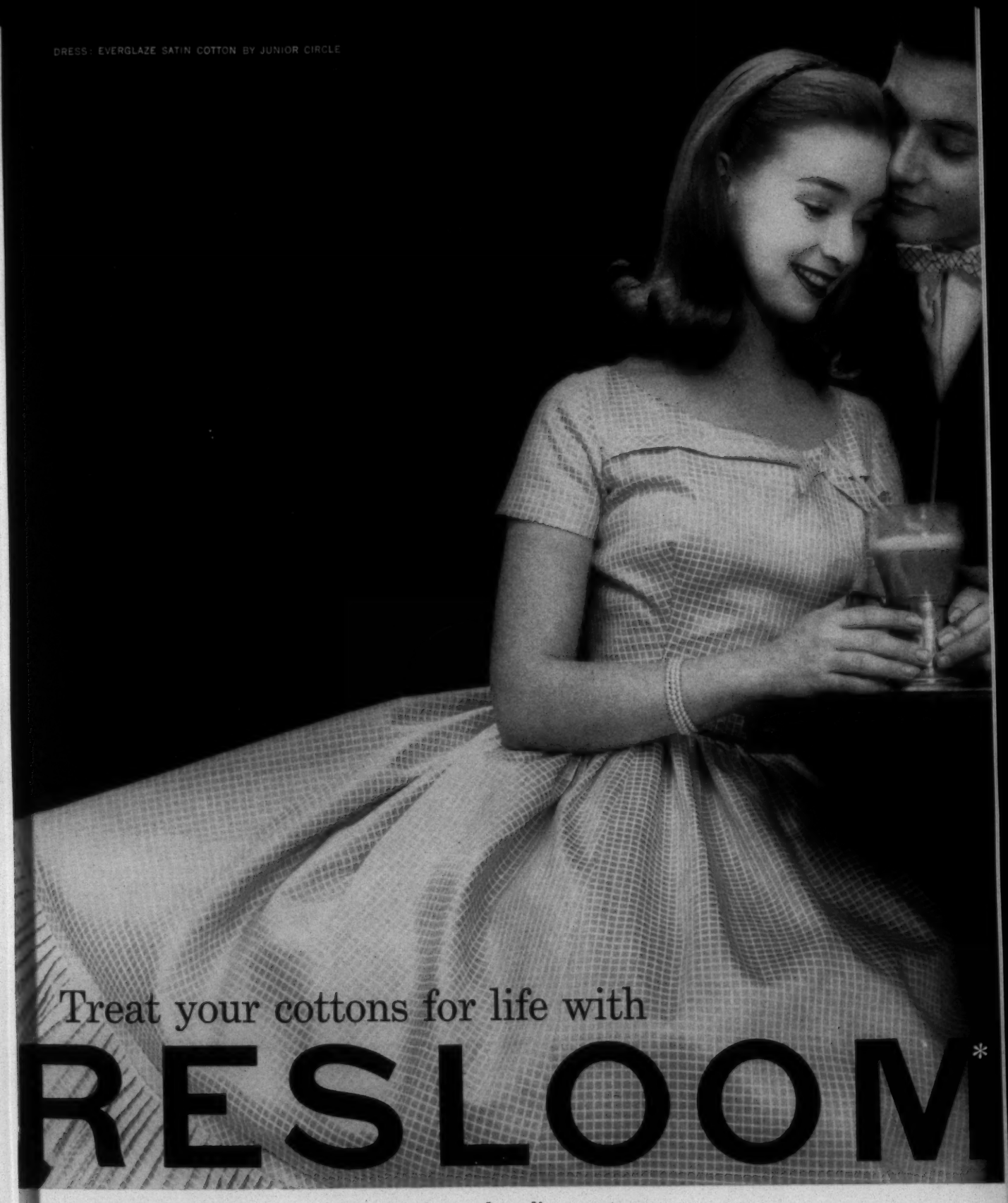

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Supplied by Monsanto in both melamine and cyclic urea types

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For finishes requiring a melamine resin, top results are obtained with Resloom HP or M-75. For finishes requiring a cyclic-urea formaldehyde, Resloom E-50 meets the most exacting standards.

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All of Monsanto's Resloom textile resins have this in common: They impart a finish that does not wash out. Treated cottons keep their dimensional stability and wrinkle recovery for life.

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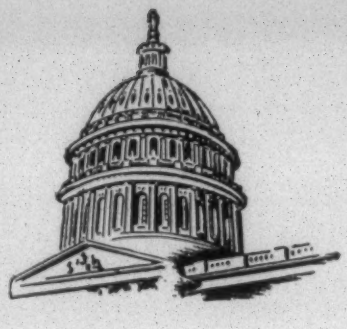
Get impartial counsel. A Monsanto representative will be glad to work with you on your cotton finishing problems. Write Monsanto Chemical Company, Plastics Division, Room 1017, Springfield 2, Massachusetts.



WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

The President and the Secretary of Agriculture have again rebuffed cotton textile interests in demands for stiffer import barriers. The contention that imports are conflicting with the support program for raw cotton is rejected by Secretary Benson. It is conceded the imports have already cost both the industry and the growers substantial sums, and that trade agreements in contemplation, through G.A.A.T. and other units, will increase the disadvantage. The issue appears to be wholly up to Congress.

Mr. Benson insists that textile imports are not rendering ineffective cotton price and acreage controls, or greatly injuring the industry. The whole cotton program of exports, and the import of foreign-made goods, is in conflict with the scheme of trade treaties and trade relations on which the State Department is launched, and relates to Britain, France, Germany and Italy, as well as Japan.

Unless Congress comes to the aid of the textile industry with positive statutory barriers, relief from the inflow of cotton made goods from abroad is not in sight. The State Department is determined in its opposition, and even an act of Congress may face a Presidential veto. Meantime this country's surplus cotton is going abroad, financed by export-import bank loans and otherwise, to the benefit of foreign mills. Foreigners in buying cotton in other countries, helped by U. S. foreign aid, are put in a stronger competitive position than ever before.

Higher minimum wages now in effect have served only to increase the disadvantage of textile mills in this country in meeting the foreign competition. In effect the new wage increase further lowers the value of the dollar, and makes domestic industry more defenseless against foreign competition. In this country the steel worker averages $20.08 a day, and the coal miner $19.45, without fringe benefits, while foreign wages are from one fifth to one-tenth of this sum.

The bill before the House Ways and Means Committee to put this country into the Organization for Trade Co-Operation has touched off a bitter fight. The O.T.C. is the new version of G.A.T.T., although the latter still exists, and is dedicated to wiping out such barriers in trade as quotas, exchange restrictions and import licensing. Opponents say the new group would be able to dictate this country's tariff policy if the bill is passed.

The Administration is faced with its hardest battle on its new foreign aid proposal, with the outlook for passage uncertain. Key to the controversy is the large quantities of strategic materials leaking through to the Soviets from countries that have benefited the most from aid in the past. Long term commitments are sought on aid to countries which have active trade relations with Russia.

Five C.I.O. unions have contributed $7,500 to Cornell University for a study of injunction suits and damage actions against labor unions. A growing number of employers are bringing suits under Sections 301 and 303 of the Taft-Hartley Law because of strikes, secondary boycotts and breaches of contracts. These actions are not dependent on prior N.L.R.B. decisions as to a Taft-Hartley

violation. One of the largest suits pending is by the Southern Bell Telephone Co. against the C.I.O. communication workers for $5 million.

Racketeering and gangsterism among local unions infested by "underworld forces" is rapidly spreading on the Atlantic seaboard, the House Labor Committee is told. A determined effort is being made to capture controlling councils and key jobs. The device employed for control is to seek area-wide negotiations and contracts, which in effect carve out domains for regional leaders independent either of a parent union or of the combined A.F.L.-C.I.O.

Labor unions in the South are being split wide open in the controversy growing out of the Supreme Court's school decision. Opposition arose in demands of Meany and Reuther that the decision should be "strictly enforced." There is talk in unions of pulling out of A.F.L.-C.I.O. and forming a new labor federation for the South. Others say that "unionizing the South" has been set back for many years.

United labor's big organizing drive has broken down before it started under a wave of conflicting jurisdictional claims. Just as often C.I.O. unions are at sword's point with their A.F.L. rivals in the same field, with each group fighting for the right to represent all employees in an industry. Efforts to bring the two textile unions together have broken down in bitter accusations.

Unity in anything other than the top echelon of A.F.L.-C.I.O. is virtually non-existent, and paper thin at the top. Older leaders of A.F.L. resent the intrusion of younger C.I.O. leaders, and feel that the C.I.O. is only waiting for them to retire before stepping in and taking control of the merger group. Generally, five years is named as the time when C.I.O. will probably take control of the merger.

Basic difference promoting disunity is that C.I.O. is dedicated to the one-big-union idea, while A.F.L. leaders espouse craft unions. The C.I.O. was born in a bitter dispute on this point. Twenty years of battling has aroused distrusts and enmities which are not easily put aside, and feuding has not abated. Moving aggressively to absorb more "industrial territory" are Dave Beck's teamsters and John L. Lewis' coal miners.

Stumbling block to easy investigation of campaign spending by the Senate is the active and unyielding opposition of labor unions. The issue divided the Senate special committee right down the middle. Unions with their vast outpourings of millions of dollars in recent years have boasted they controlled election results in a third of the states. Now that investigation is pointed in their direction, too, they want the Senate to soft-pedal, and then bury, its investigation.

Northern Democratic leaders, led by Chairman Butler, have loudly demanded the President call a conference to consider racial relations. The suggestion was first made by Mr. Stevenson. The purpose would be to discuss means by which the Supreme Court decision on integration could be fully enforced in all states.

Few observers believe the unbridgeable gulf that has risen over integration could be settled by a conference at the White House, or anywhere else. Even if it made unanimous recommendations, which is extremely unlikely, it would not change the existing situation.

The bitter fight to put 100 per cent rigid price supports under farm products, as urged by the Farmers' Union, does not end with action on the farm bill. The objective of the union is both 100 per cent rigid supports and "redistribution of farm land," including breaking up larger farms, and giving added land to smaller farms. The proposed 100 per cent subsidy would entail an annual outlay, or gratuity, from the Treasury of four to six billion dollars.

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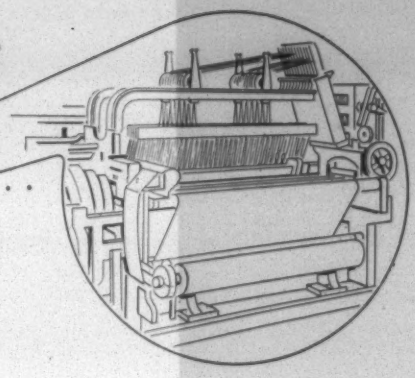

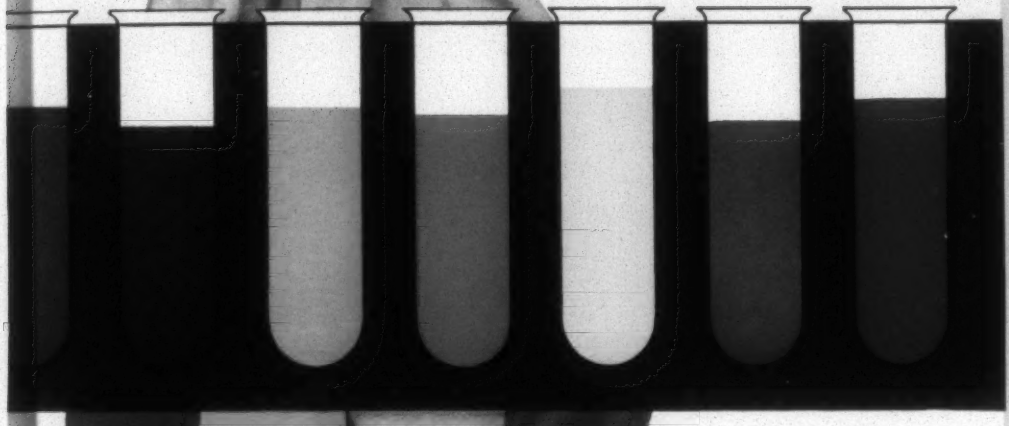

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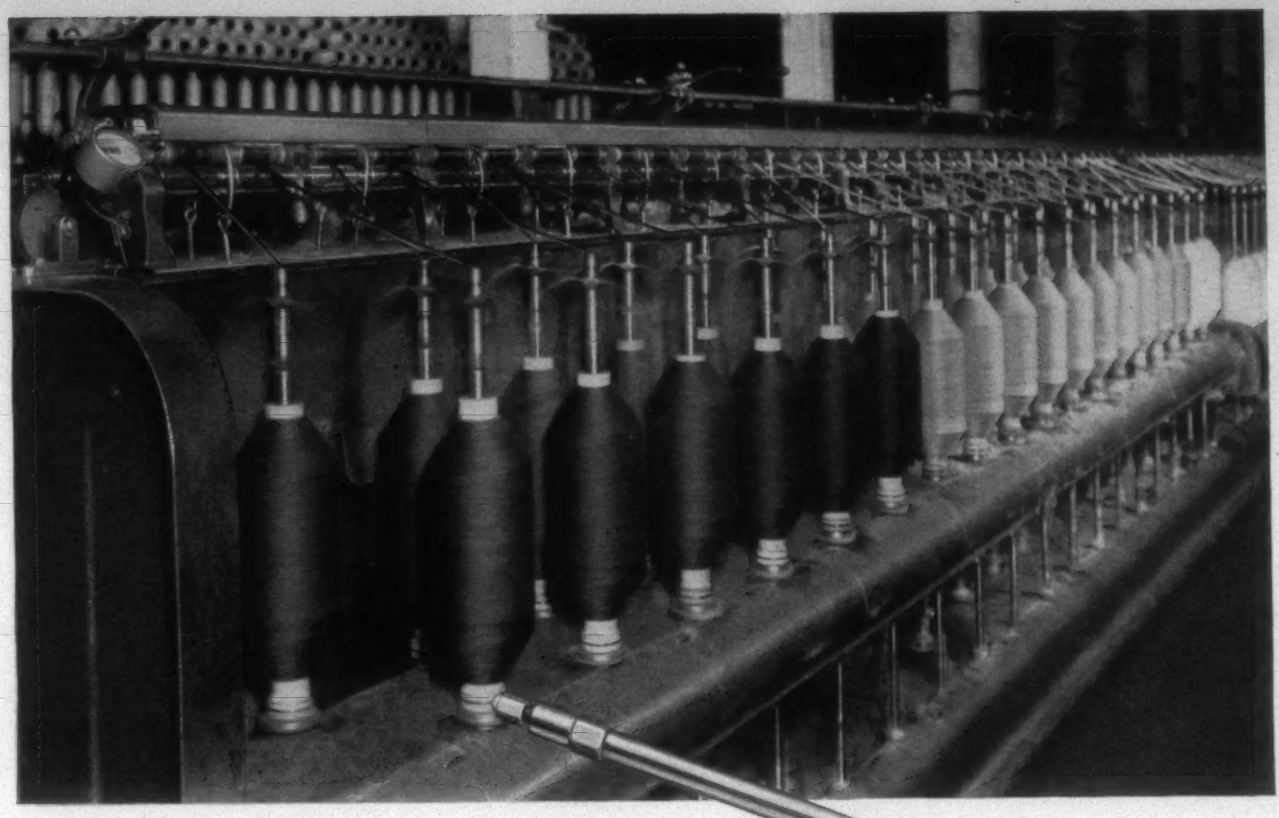

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You can cut oil-drag in your spindles by switching to lighter-bodied Sinclair LILY WHITE Oils! These highly refined, extra light colored oils cut power requirements, cut oil consumption, and reduce bolster wear. In this way, LILY WHITE Oils save you money, reduce maintenance needs, and prevent needless interruptions in production.

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Sinclair LILY WHITE Oils are available in seven grades – four grades in a straight mineral oil, and an additional three grades with additives for supreme protection against wear and rust. A Sinclair Lubrication Engineer will be happy to make recommendations to meet your *particular* problem. There's no obligation. Just contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

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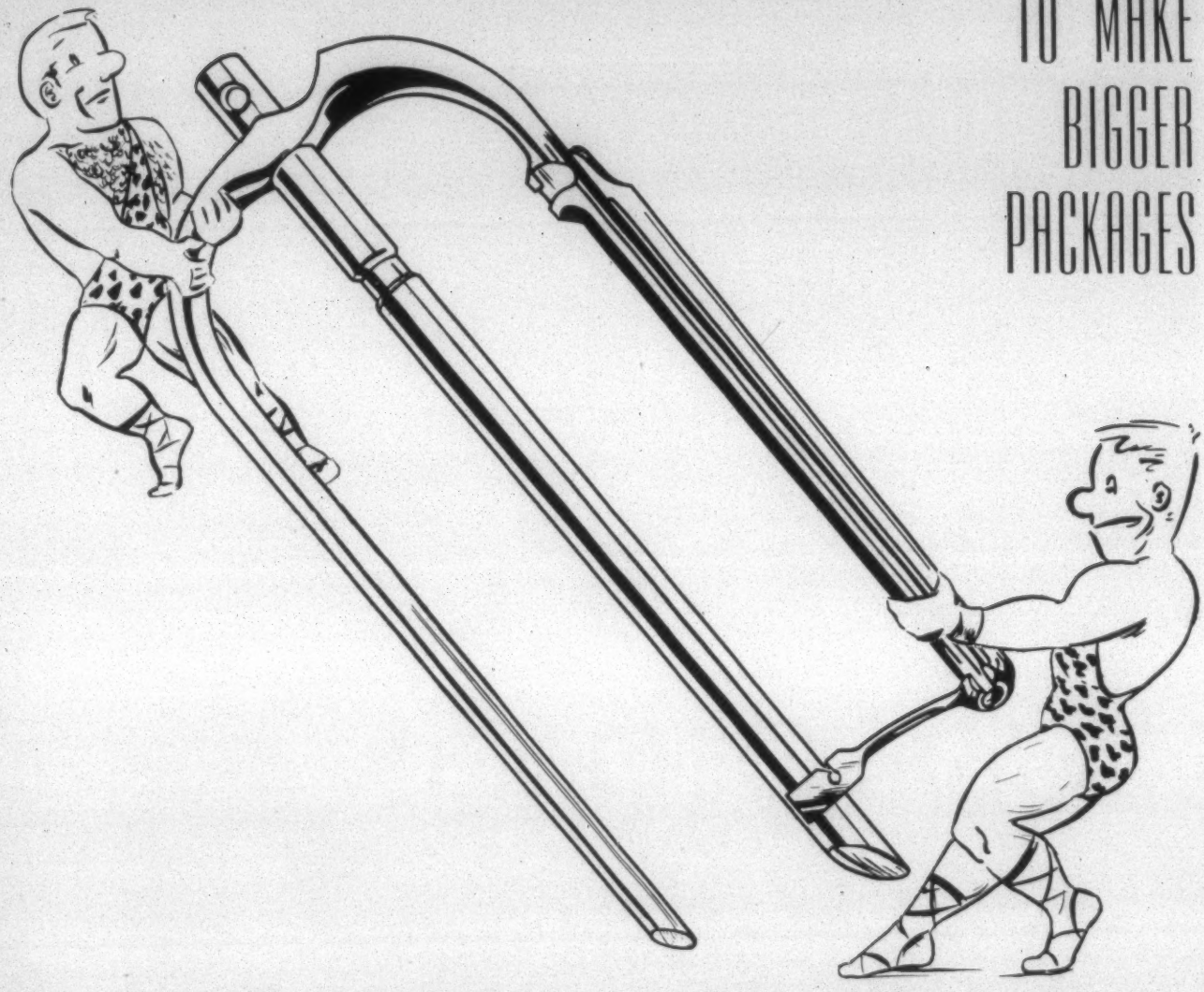
WE S-T-R-E-T-C-H YOUR FLYERS TO MAKE BIGGER PACKAGES



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Ideal Machine Shops, Inc.

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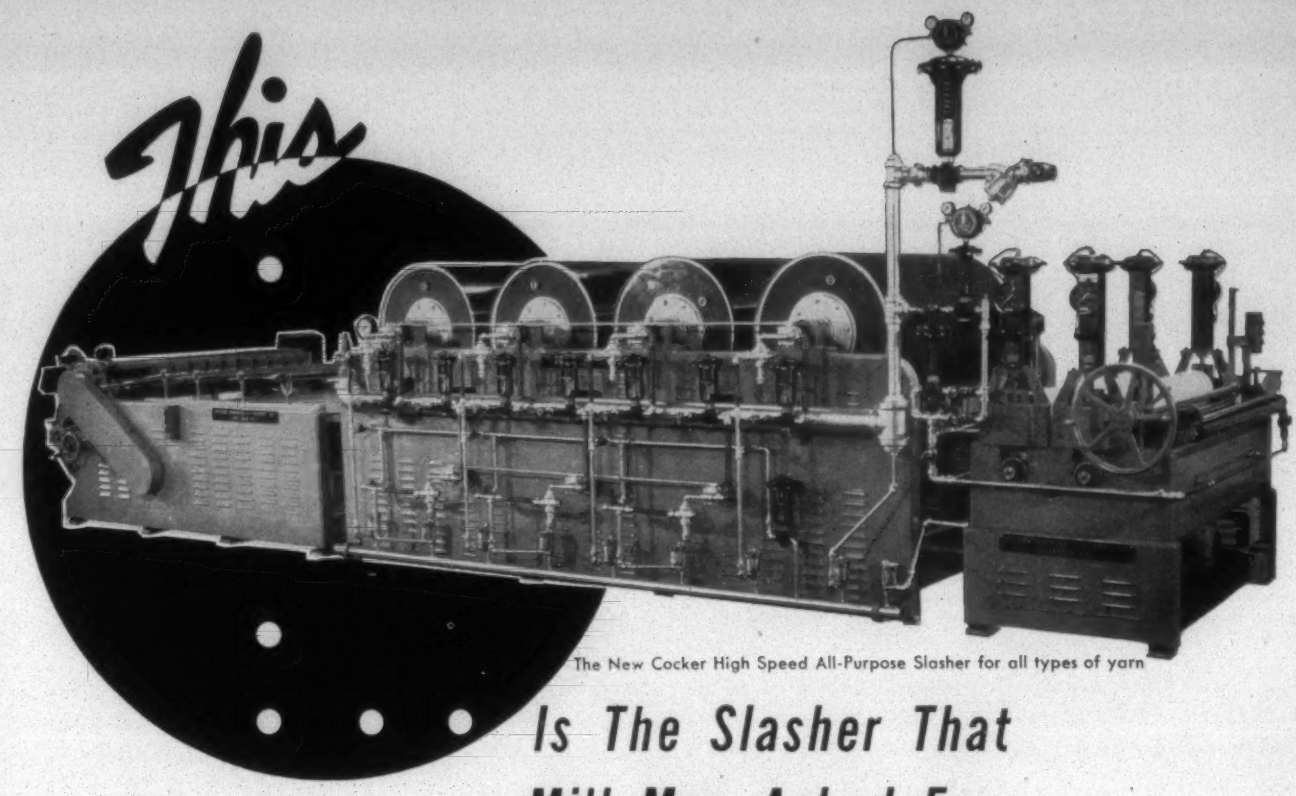
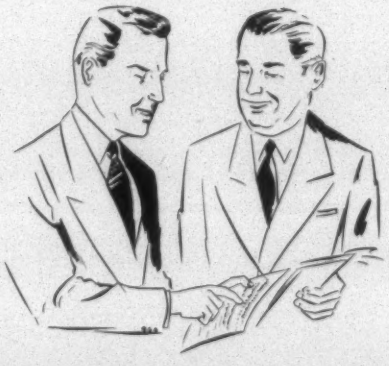
30th Year of Continuous Service to Textile Mills



The New Cocker High Speed All-Purpose Slasher for all types of yarn

Is The Slasher That Mill Men Asked For



Hundreds of mill men told us what features they wanted in a new slasher. Cocker engineers, backed by twenty years of study and experience, have incorporated these features in the New Cocker All-Purpose Slasher.

Some of the many advantages of this new Cocker Slasher are:

1. Air operated carrier and delivery rolls.
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3. A fast and simple latch release for beam doffing, requiring no change of position of beam carriage.
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The stainless steel size box has also been greatly improved.

Cocker Slashers are built to ASME Code Construction in both 15 and 35 PSI.

Former Cocker Slasher models were already acknowledged to be the most efficient, economical, and versatile slashers on the market. This new Cocker Slasher is truly the Slasher of Tomorrow. Get full information on it today.

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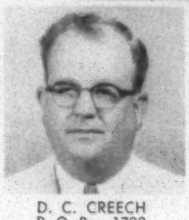

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. . . then, think of what you get in ALDRICH PICKERS!

As long as there have been pickers, there has been trouble with the shoes that hold the calender rack gears in mesh with their spur gears on the cross-shaft.

These shoes are not on the Aldrich calender. The roller, pictured above, running on an Oilite bushing and attached to a mounting pivoted on a stationary shaft in the calender, holds the calender rack gear exactly in place without any possibility of binding or jamming.

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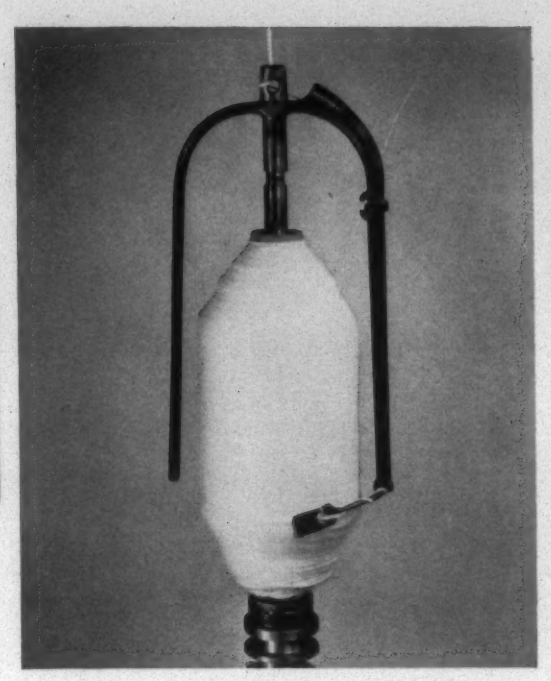
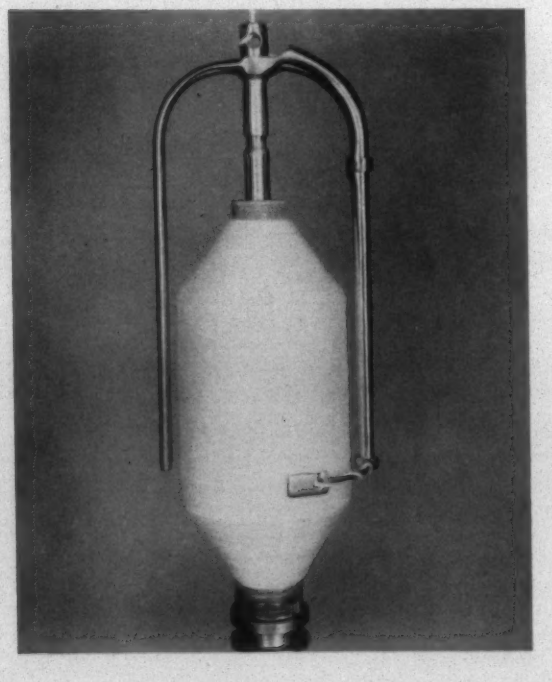
When you see tangled bobbins and frequent ends down . . . that's your danger signal! Worn pins, barrels and spindle tops slow production—cost you money. Rusty, burred flyers out of balance add to production costs. Step up your production. Let Norlander-Young rebuild and dynamically balance your spindles and flyers.





Your production line will hum after Norlander-Young rebuilds your flyers and spindles. Our experts will prove to you that precision workmanship and years of experience pay big dividends in higher production.

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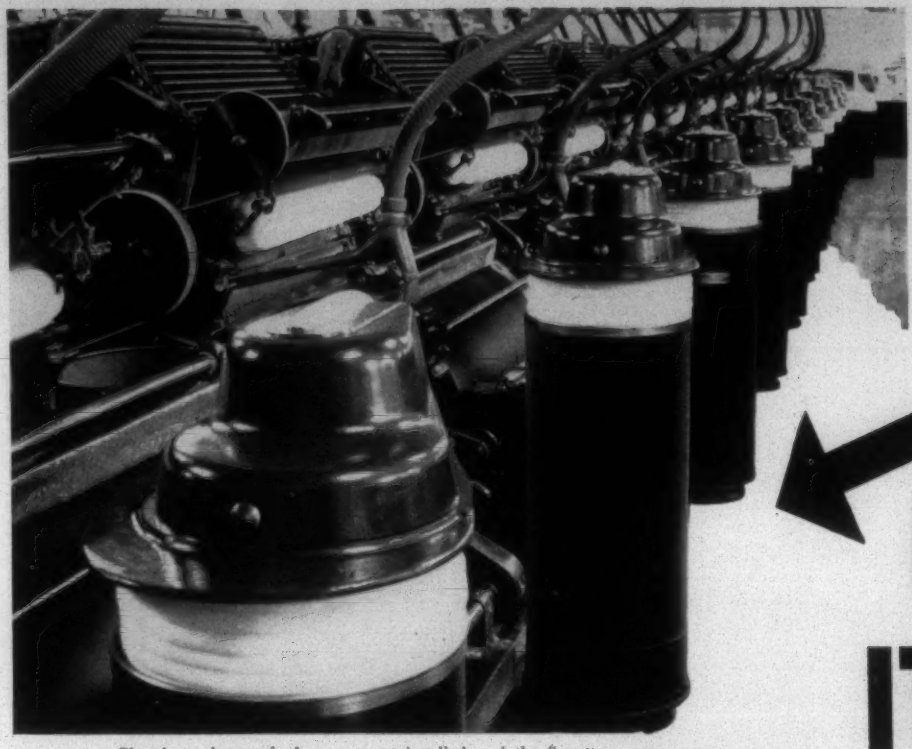

The above photograph shows a recent installation of the Gossett economy change-over, equipped with Gossett's big new coilers with anti-friction bearings. Size of coiler shown is 16" x 36".

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Gossett's big coiler for 1956

Gossett Machine Works pioneered the big coiler conversion technique. Now Gossett master technicians have developed a big new coiler . . . bigger and better than ever.

The Gossett Machine Works has been serving textile mills for more than a quarter of a century. So it is not surprising that Gossett technicians have developed a practical, sure way to greatly increase the amount of sliver per can . . . . . and do it at a moderate cost. In fact, more than 100 Southern mills have already installed a complete Gossett coiler conversion. Upon written request, we will be glad to give you the names of these mills.

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Get Cost of the

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We will be glad to give you the cost of a change-over, using our economy package plan which

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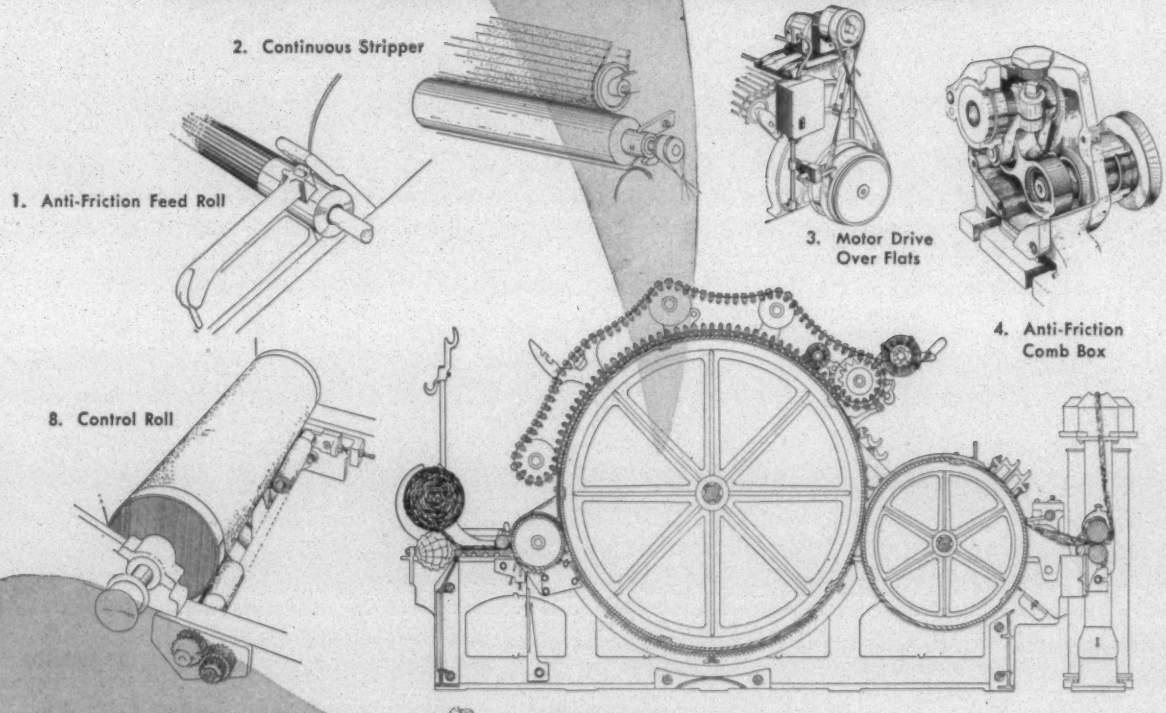
YOUR SACO-LOWELL CARDS WITH THESE 8 SUB ASSEMBLIES



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– NEW MACHINERY, EQUIPMENT AND SUPPLIES –

Esco Loom Cleaner

The Esco Corp. announces the development of the Esco loom cleaner. The loom cleaner has been designed to operate on single-line loop systems or mounted on double girder bridge cranes to provide constant coverage over multiple rows of looms. The crane cleaners work on the same runways in combination with beam handling bridges, having built-in limit switches to permit constant operation of the crane cleaners without collision with the handling bridges. This permits the system to do double duty in both cleaning and handling. Savings in labor are effected in both cleaning and handling with the combination of Esco crane cleaners and beam handling bridges. In addition, loom stoppage is greatly reduced and the quality of the cloth is improved by constant cleaning which prevents the accumulation of lint on loom parts.

A feature of the Esco cleaners is the method and means for providing a deflected high velocity of air, with controlled distribution, over harness, drop wires, etc., of the loom. This is accomplished by means of a downwardly directed discharge spout and adjustable deflector flared traversely of the looms in a row being cleaned. Oscillating fans are provided for ceiling cleaning. Continuous duty motors are furnished for all blowers, fans and crane drives. All moving parts have anti-friction bearings. The Engineering Sales Co., manufacturers' representative and distributor of industrial equipment for the past 25 years, is exclusive sales agent for the new cleaners.

(Request Item No. C-1)

Esco loom cleaner, designed to operate on single-line loop systems or mounted on double girder bridge cranes to provide constant coverage over multiple rows of looms (Esco Corp.)

Resin-Fast Sandoz Dyestuff

Sandoz Chemical Works Inc. is offering a new dyestuff, Pyrazol Fast Blue FLL, a greenish blue fast-to-light direct color which reportedly combines very level dyeing properties with maximum economy. Fabrics dyed with Pyrazol Fast Blue FLL show little or no change in shade or light fastness after resin treatment, Sandoz reports. For applications where resins are not used, fastness properties are said to be more than adequate.

(Request Item No. C-2)

Sterile Chemical Finish

A new permanent chemical finish for textiles that reportedly will kill disease-bearing and odor-causing bacteria coming into contact with fabric has been developed by Yardney Chemix Corp. Marketed under the trade name Eversan, the new finish can be applied by incorporating it in bleaches, dyes, inks or resins without any addition to current processing cycles. It is non-toxic and non-irritating, as established by numerous tests of which reports have been filed with the proper authorities in accordance with existing regulations, Yardney reports.

Exhaustive tests under laboratory and commercial manufacturing conditions reveal the new process is as long-lasting as the fabric treated, irrespective of the number of washings to which the cloth is subjected. Tests have shown that Eversan-treated fabric, soaked in highly contaminated solutions, will return to 99% plus sterility within 4 hours after removal from contamination, without washings or attention of any kind. It is expected the new process will have a significant place in all industry and applications, where bacteria-caused odors, fabric degradation and sterility are important considerations. (Request Item No. C-3)

Draper Aluminum Pick Arm

Aluminum pick arm and lug strap connection (Draper Corp.)

Draper Corp. announces that a new aluminum pick arm and lug strap connection is now available for the company's X-2 and XD Model looms. This new, lightweight, all-aluminum construction (equipped with a Uniball end connector) eliminates binding during the pick, improves picking action and reduces wear on all component parts, Draper reports. Calibrated to simplify standardizing of power settings, the aluminum pick arm permits quick, easy, visual checking on maintenance of loom settings.

(Request Item No. C-4)

Pilling Tester

A change in the material of construction on the Pilling Tester sponge and nylon brush boards is planned by Custom Scientific Instruments Inc. Laminated wood, similar to that now used in the base and table of the unit will replace the plywood boards presently used. This change is expected to eliminate any possibility of these boards warping. No price change for the Pilling Tester is anticipated. The following changes have been made in the sample boards to aid the technician in use of the tester. Rubber tubing now covers the sample rods and screen door hinges have replaced the old-type fasteners to give more positive pressure in holding the sample fast. (Request Item No. C-5)

Transformer Nozzle

A new spray nozzle for protection of transformers has been announced by Bete Fog Nozzle Inc. The new nozzle, called T-1, has been tested and approved by the

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Rigid Creel construction due to solid steel Creel Posts, heavy cast iron Supports and extruded Channels.

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FOR THE TEXTILE INDUSTRY'S USE—

Factory Mutual Laboratories. With only 4 Bete T-1 nozzles per transformer, it is now possible to isolate or extinguish a transformer fire before it spreads to other equipment according to new Factory Mutual developments and specifications. Formerly many nozzles and a costly installation were required, the company points out.

The Bete T-1 nozzle delivers approximately 80 g.p.m. at 25 p.s.i. with a driving 80° full-cone spray pattern suited to outside work under all weather conditions, according to the manufacturer. The T-1 is made of cast bronze. All passages are large and non-clogging. It has 2" female pipe thread.
(Request Item No. C-6)

Celanese Fire-Retardant Acetate Filament Yarn

Celanese Corp. of America is now producing a fire-retardant acetate filament yarn in both natural and solution-dyed colors. The yarn has been in commercial production for almost a year, with the major volume being used by manufacturers of doll wigs. However, the Celanese fabric development department is currently evaluating several experimental fabrics, utilizing the fire-retardant yarn, in a variety of end-uses where fire-resistance is of particular importance. A promising application for the fire-retardant acetate yarn is in decorative fabrics.
(Request Item No. C-7)

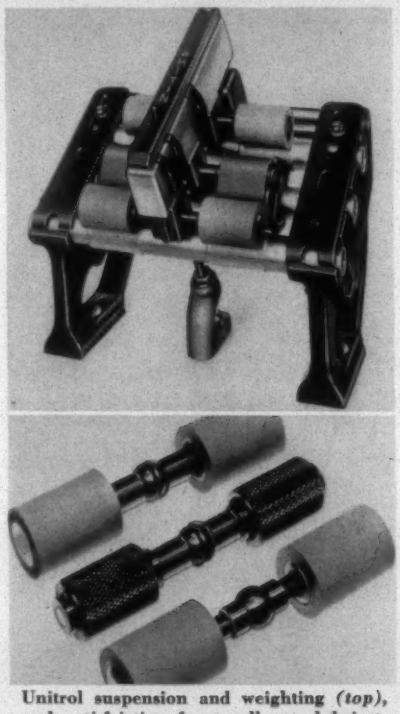
Anti-Static Chemical

A chemical called Statikil has been developed by The J. E. Doyle Co., in co-operation with leading chemical laboratories, that is guaranteed by the maker to stop static electricity. The product, packaged in handy self-spraying cans, contains no mineral oils, radium, mercury or harmful acids and is non-toxic. It can be applied as liberally as needed but the lightest of applications is said to be effective, and a single can is suitable for a hundred applications. Continued use is cumulative, reducing the frequency of static evidence and eventually creating completely static-free conditions. Although sold in self-spraying cans, the product is available in bulk for swabbing, wiping, spraying with hand pump sprays or hand power sprays or by fogging onto materials by means of fully automatic jet nozzles.
(Request Item No. C-8)

Drum Handling Clamps

The Yale & Towne Mfg. Co. has announced the development of a new rotating drum handling attachment of 2,000-lb. capacity which can serve a number of drum handling assignments and is particularly effective where quick horizontal placement or stacking is a materials handling requirement. The attachment's distinctive ability is said to lie in the design of the rubber-coated clamp arms. One arm is articulating and shaped with 2 concavities which fit the shape of a drum. The other is flat-surfaced and tapered slightly so that upon release of clamping pressure the drums will roll into position. The attachment rotates through a 90° arc to permit picking up drums in the vertical position and stacking them horizontally at a height dictated by the capacities of the Yale truck on which it is mounted. The new clamp can handle 2 drums in this manner. Used to pick up, transport and stack drums vertically, the attachment can handle 4 drums at one time. Clamping range of the 42" long arms is from 17⅜" to 71⅜". (Request Item No. C-9)

Top Roll Suspension And Weighting Arrangement



Unitrol suspension and weighting *(top)*, and anti-friction front roll, non-lubricated middle and back rolls *(below)*. (Whitin Machine Works)

Whitin Machine Works has announced the development of a new top roll suspension and weighting arrangement for spinning. The unit has a streamlined top arm for holding the top rolls in correct, exact alignment and containing within it the spring weighting mechanism. The 3 top rolls used are also said to be entirely new in internal design and construction. The front top roll has a rigid shaft mounting 4 high-precision anti-friction bearings, and it can be covered with any conventional cot material as required. The mdidle and back rolls are non-lubricated type, the bosses of each designed to rotate with its shaft which revolves in non-rotatable bearings. Special design provisions have been made in all 3 rolls to eliminate lint accumulation, Whitin points out.

By suspending the top rolls and using anti-friction construction for the front line and non-lubricated construction for the middle and back lines, oil has been completely removed from the drafting area. This eliminates troubles usually associated with the use of oil, Whitin points out, such as soiled yarn, damaged cots and soiled bands. Oil also attracts fly and lint, contributing to yarn deficiencies such as gouts and irregularity. Whitin reports that some mills using

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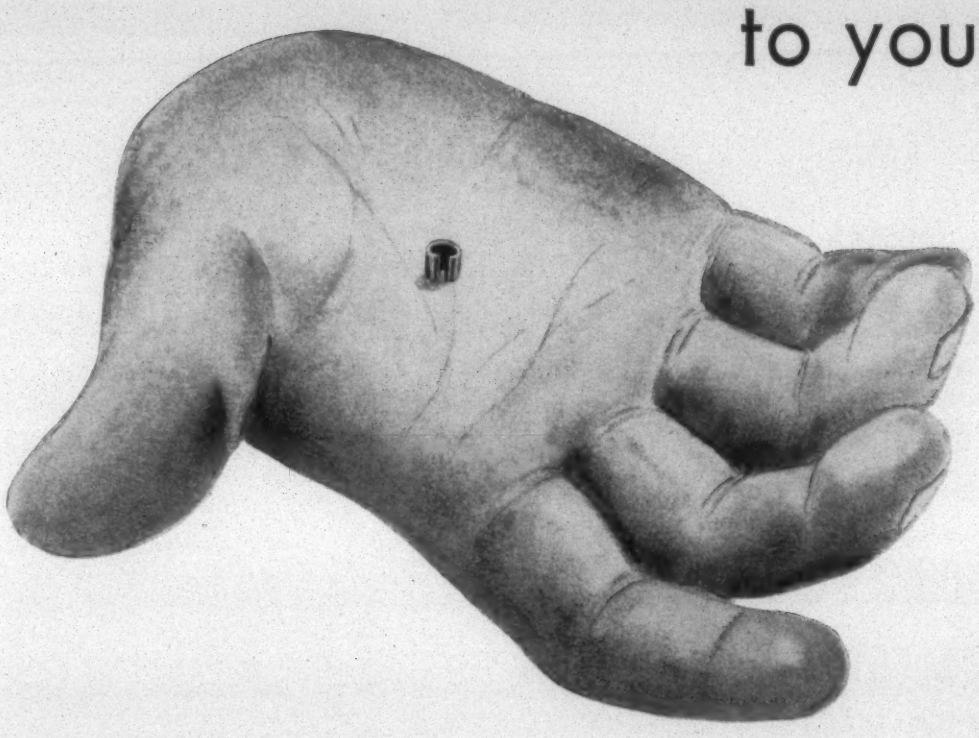

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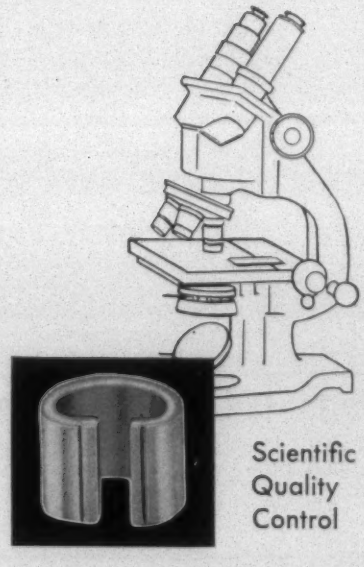
Metallurgical engineers check every step in manufacturing Carter Travelers, and make precision tests in Carter's modern laboratory, to assure absolute uniformity of weight, temper, shape and the constant high quality of Carter Travelers.



Scientific Quality Control

CARTER TRAVELER COMPANY

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FOR THE TEXTILE INDUSTRY'S USE—

the new arrangement have reduced picking and cleaning time as much as 95%.

By pre-calibrated springs contained in the top arm of the new unit, a total pressure of 60 lbs. is distributed over the 3 lines, 30 lbs. on the front and 15 lbs. each on the middle and back lines. Other weightings can be obtained by using different springs. The weighting is universal and applicable for all staples up to 2". A most important feature, Whitin points out, is that weighting remains unchanged for any roll setting.

The new Unitrol center suspension unit consists of an accurately machined rigid arm mounted on the conventional back bar rod. The rolls are precisely held in blocks which are secured to the under part of the arm. When in operating position, the rolls are held in proper alignment against the bottom rolls. When the arm is moved up, the rolls are relieved of the spring pressure but are retained in their blocks. The springs, entirely contained within the arm, are located directly over the roll and act directly upon them without any lint-collecting linkage or saddles. Construction of the unit reportedly provides for adjustable setting of the top front roll over a sufficient range to satisfy mill requirements for its relationship to the front bottom roll. The middle and back rolls are fully adjustable for the complete range of spreads attainable on Whitin T-2 and T-3 roll stands, the company points out. (Request Item No. C-10)

Genton 110, Nylon Dispersion

General Dispersions Inc. has announced that it has developed a new form of nylon under the trade-name Genton 110. The new product is described as a dispersion of Du Pont's Zytel 61 nylon resin in water. It offers complete safety in operation plus all the properties of nylon, the manufacturer reports. The company expects it to find acceptance in many fields where its exceptional resistance to abrasion, inertness to most chemicals and solvents, grease-proofness, toughness, flexibility, tensile strength and clarity would improve the qualities of the finished product. It may be used as a finishing, bonding or strengthening agent for threads, yarns and all types of woven and non-woven fabrics. Descriptive literature and samples are available for evaluation.
(Request Item No. C-11)

60 Case Material

Thomson Industries Inc. announces the standardization and availability of an entirely new type of industrial material which has been designated 60 Case. This designation covers long, round, hardened bars for use as guide rods, shafts, rolls, piston rods, axles, etc. Material is AISI 1060 steel which has a surface hardness close to 60 on the Rockwell C scale and is precision ground to standard diameters.

The development is said to be a result of over 10 years of experimental work and production experience by Thomson with hardened and ground shafts which are a requirement for ball bushings, the linear ball bearing manufactured by the company.

Long, round parts which should have a hard wear surface have always been a serious fabrication problem to industry primarily because conventional heat treating causes warpage. Now these can easily and economically be furnished from 60 Case material. The special techniques and equipment that have been developed enable high production rates, minimum distortion and low handling costs, Thomson reports. This permits savings over conventional methods which are plagued with erratic warpage that creates straightening and grinding problems. Finished 60 Case parts frequently cost less than the scrap losses that result from conventional methods, Thomson points out.

Initial standard sizes range from a nominal diameter of ¼" to 4". The maximum length varies from 8' to 14' depending on the diameter. The depth of hardness ranges from .040" minimum in the smallest diameter to .100" minimum in the largest diameter. An inventory of standard sizes is maintained to enable prompt shipment of 60 Case parts, either with or without special machining. Literature on this new material is available upon request.

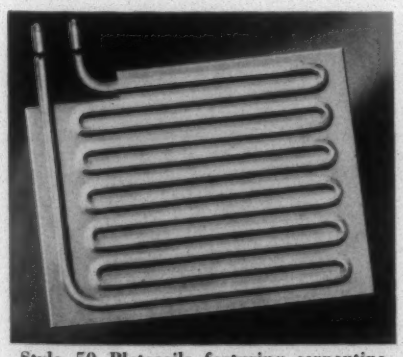
(Request Item No. C-12)

Anionic Softener

E. F. Houghton & Co. has developed a new anionic softener for use with all types of fibers, and said to be able to suppress static electricity in nylon, Orlon and Dacron. Softex 595, a non-oxidizing white paste which may be used as the softener in a starch finish, and which can be applied to yarn from an emulsion roll or from a standing bath, is said to require only little mixing, and helps condition fibers to which it is applied. During a test period, users noted its ability to suppress static electricity on nylon, Orlon, Dacron, but not on acetate, Houghton stated. Knitting results are reportedly good and Softex 595 can be used by dyers of cotton yarns, by knitting mills processing their own yarn and by finishers of any type of piece goods, it is said.

(Request Item No. C-13)

Tranter Platecoils



Style 50 Platecoils featuring serpentine construction (Tranter Mfg. Co.)

A new line of Platecoils featuring serpentine construction and "at-the-top" connections is now available from Tranter Mfg. Inc., Platecoil Division. Platecoils are heat transfer units designed to replace pipe coils in industrial processes requiring the application or removal of heat. They consist of 2 embossed metal sheets welded together to

FOR THE TEXTILE INDUSTRY'S USE—

provide a preformed channel for the flow of heating or cooling media. The right-angle inlet and outlet fittings on the Style 50 Platecoils make them especially suitable for use in open top tanks. They can be quickly hung in position, with all threaded connections above the solution level, permitting quick, easy removal for cleaning or inspection without draining the tank. The serpentine layout of the channel provides continuous, in-line flow of the heating or cooling media. Style 50 Platecoil is available in 18" or 22" widths, and in lengths from 23" to 119". Over-all thickness is 7/8". Metals available are cold-rolled steel, stainless steel and other alloys for corrosive solutions. (Request Item No. C-14)

Becco Bleaching Process

The Becco Chemical Division of Food Machinery and Chemical Corp. has announced the development of a procedure for ultra-rapid hydrogen peroxide bleaching of cotton fabrics in open-width. This "flash-bleaching" procedure will reportedly enable a finishing plant to bleach cotton fabrics of various weights and constructions in a matter of minutes. Conventional bleaching methods require a dwell of from 1 to 1½ hours in the J-boxes of continuous peroxide bleaching ranges, and from 4 to 6 hours in kier bleaching, Becco points out. The new Becco process will be ready for its first commercial installation upon the completion of special equipment which is now being developed. The process is expected to be particularly welcomed by wet finishers of fabrics such as sateens, poplins, twills and others, which are normally processed open-width. Because of their construction, these fabrics require careful handling during wet processing. (Request Item No. C-15)

Double Wheel Caster

A double wheel caster, combining extra load carrying capacity with minimum over-all height, is offered by The Hamilton Caster & Mfg. Co. under the trade name Kalber. Designed for extra compactness and perfect oscillation, the Kalber features patented "knee-action" for easy rolling, even over rough surfaces, without stalling or digging in, according to the manufacturer. A zerk pressure-type fitting, located in the central housing, provides one-shot lubrication to the swivel assembly and both wheels. The casters are available with all-metal wheels, or equipped with rubber tires. Wheel diameters range from 3" to 9"; capacity ratings from 400 lbs. to 1,200 lbs. per caster. (Request Item No. C-16)

Delustered Nylon

Industrial Rayon Corp. has started production of a delustered form of its new nylon staple fiber for floor covering use. The new nylon fiber, it is stated, will offer opportunities for flexible designing in line with current style trends. Industry technologists and designers will be able to use the fiber in combinations to achieve tone on tone effects. It is anticipated that many new and interesting variations may be developed not only by combining lusters but also by varying twist of yarns made from a dull staple in combination with yarns made from Industrial Rayon's standard bright nylon staple. The new delustered fiber is being offered in 8 and 15 denier and is priced the same as the company's standard bright luster nylon product.

(Request Item No. C-17)

Surface Active Agent

A new anionic surface active agent known as Isomal 265 has been developed that can be used in the processing of textiles as a wetting agent, rewetting agent, penetrant, detergent and emulsifier. It is specially formulated to reduce processing time and increase processing efficiency. The new fluid, developed by The Johnson-March Corp., is described as a concentrated sulfonated ester-type liquid with exceptional characteristics. It is said to be unusually versatile and efficient, and its unusual wetting, rewetting and penetrating properties are said to improve efficiency in scouring, dye leveling and similar processing operations.

New manufacturing techniques are said to give Isomal a lower surface tension than any other similar product, with unmatched wetting and rewetting properties. It is reported to have a broader range of solubility in water and nearly all organic solvents than ever before possible with any surface active agent. It is easily dispersed in alcohol, acetone, petroleum solvents, oils and chlorinated solvents in practically any type of application. Clear in appearance, Isomal 265 has a neutral pH factor and a specific grav-

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ity of 1.088 at 60° F. It is approximately 65% active and mildly pleasant in odor. High operating efficiency is obtained from a unique balance of lipophilic and hydrophilic elements. The solution is compatible with both non-ionic and other anionic agents. It is stable at elevated temperatures (up to 210° F.), and has no upper or lower cloud point. (Request Item No. C-18)

Stiffness Tester

Improved Drape-Flex stiffness tester (Fabric Development Tests)

Fabric Development Tests announces its improved Drape-Flex stiffness tester conforming to the requirements of the new A.S.T.M. method D-1388-55T for testing the stiffness of fabrics. The standard angle of inclination has been changed from 43° to 41½° in accordance with British Standards, the company reports. A levelness indicator has been incorporated in the unit and suitable means have been provided for adjustment. In addition, a new reversible scale permits reading test results in either inches or centimeters. The tester because of its simplicity, ease of operation and low cost is finding increased use in testing sized and resin-treated fabrics, felt, non-woven textiles, coated fabrics and plastic film, the manufacturer reports. (Request Item No. C-19)

Floor Surfacing

Plant Maintenance Inc. announces the development of Poly-Rock, protective floor surfacing. The product is said to be more resistant to acids, oils, solvents and water than any material known to date. Said to be suitable wherever floor deterioration is a problem, the product contains no asphalt, cement, latex or other similar ingredients found in most floor surfacing materials. It is produced in a non-slip form and reportedly withstands considerable abrasion equal to most concrete surfaces. One of its greatest features, the manufacturer notes, is its speed and ease of application without expensive floor preparation, equipment or lengthy shut-down periods. It can be easily applied by plant crew or contractor in small areas at a time and used within 12 to 24 hours. (Request Item No. C-20)

Stereoscopic Microscope

The George Scherr Optical Tools Inc. announces the availability of a new model Leitz textile stereoscopic microscope, for use in the textile industry, for the analysis, dissecting and repair of textiles. When

equipped with an available accessory of a thread counting attachment, it simplifies the counting of picks and ends, and threads in fabrics by means of a pointer in a precision slide. Even the finest woven material can be counted without error or eyestrain, it is said. The microscope reportedly offers an exceptionally wide field, eliminating the necessity of frequently moving the material. It also has a long working distance, thus permitting the inspector to use dissecting needles. Its true stereoscopic vision giving third dimensional effect, brings into sharp relief the individual threads of the cloth, and permits the use of the instrument over long periods without undue fatigue, Scherr points out. Descriptive literature is available upon request. (Request Item No. C-21)

B.C.I. Nylon Dispersion

Belding Corticelli Industries is now producing a new nylon emulsion bonding, coating and finishing agent. Manufactured from Type 8 nylon resin, under license from E. I. Du Pont de Nemours & Co., this new product is identified as B.C.I. nylon dispersion. The company reports that its new nylon emulsion may be applied by dip coating, by roller or by spraying with either a heat-sealable thermoplastic or thermoset finish as desired. Field tests reportedly disclose that for non-woven fabrics, this new nylon emulsion is a bonding and finishing agent that exhibits exceptional adhesive strength which increases the strength and flexibility of such fabrics as well as improving their laundering and dry cleaning characteristics. For woven or knitted fabrics, the dispersion reportedly adds abrasion resistance and tensile strength as a newly-developed and now marketed finish. It is also said to be permeable to moisture vapor for breathing. (Request Item No. C-22)

Conductivity Controller

A new electronic instrument for controlling the conductivity of solutions has been developed by Fielden Instrument Division of Robertshaw-Fulton Controls Co. The company believes the new device, which is an adaptation of the proven Fielden Series 97 temperature controller, fills the need in industry for a low cost solution conductivity controller where recording is not required. The instrument, it was stated, will find wide application wherever it can be employed in controlling water purity, presence of specific chemicals in solutions, process baths, etc. Designed for simplified use and operation, the controller is equipped with 2-zone action for both alarm or control. A single set-point knob on the front provides control within the range of the instrument calibration. It is available in 2 standard ranges of conductivity: 0 to 30 micromhos/cm 3, or 20 to 200 micromhos/cm 3, for use with conductivity cells having a constant of 1. The scale calibration is non-linear and provides maximum readability at high specific conductivities.

Accuracy of the instrument is said to be plus or minus 0.5% of full scale, and it has a sensitivity of plus or minus 0.1% of full scale, exclusive of the cell and temperature compensator. In solution temperature changes between 20°F. and 100°F., automatic temperature compensation limits the maximum error to plus or minus 2% or plus or minus 5% of full scale. The instrument is contained in a small compact rubber gasketed, cast aluminum case, 6½" wide, 7½" high and 4" deep. Two indicating lights, red and green, are built into the case to show whether the controlled variable is above or below the set-point. A special fail-safe feature of the instrument will indicate a high specific conductivity condition upon failure of a vacuum tube or power supply, shorted cell, etc. The controller is available with various types of conductivity cells, depending upon the application. The standard compensating bulb is provided with a 316 stainless steel sheath.

(Request Item No. C-23)

Construction Fastener

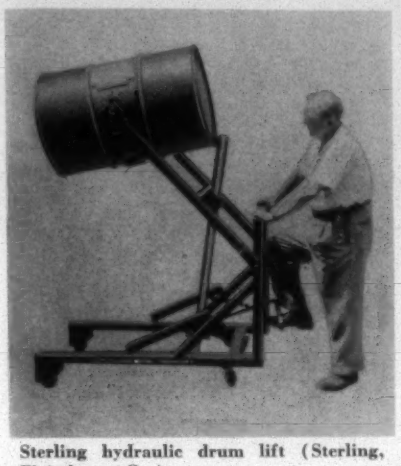
A new stud-welded construction fastener with an aluminum cap which is said to permit faster field-assembly and improve the appearance of insulated metal sandwich and other curtain walls has been developed by the Nelson Stud Welding Division of Gregory Industries Inc. Identified as the Setlok fastener, and already used extensively in attractive, weathertight Fiberglas-insulated metal buildings, the new fastening system employs a steel shoulder-type stud with serrated tip which is end welded to structural girts with the Nelson stud welding gun. In sandwich-type construction, the inner skin—usually corrugated aluminum, but sometimes a flat sheet or formed pan—is impaled over stainless steel, cadmium-plated or mild steel studs and speed clips are applied to hold the inner material firmly in place. Fiberglas insulation is then impaled over the studs and the exterior material, frequently ribbed panels of .032 embossed aluminum, is next impaled with a hard rubber hammer, so that the sheet rests firmly against the shoulder of the stud.

The aluminum Setlok cap is then placed over the serrated tip of the stud and driven into position with a tool which causes the aluminum to flow into and to grip the serrations. Tests have demonstrated that this fastener, when in place, has a holding power of more than 800 pounds on a direct pull, the manufacturer reports. Rust and galvanic action are prevented by the use of the new granular flux-filled Setlok studs and the aluminum caps which are used to secure all of the wall components in field-assembled, insulated sandwich curtain walls. There is no occasion for drilling structural members, for the use of tees or channel spacers, and all of the work is handled from one side. The same fastener is said to be equally effective when used with a single sheet of metal roofing or siding material and in insulated structures with mat-faced Fiberglas insulation on the interior and metal only on the outside. Special sheet metal tee bars developed by Nelson for such installations are impaled over the studs and serve as spacers and interior battens between which the Fiberglas is retained. This formed sheet metal tee bar reportedly eliminates all need

for hand welding of structural tees commonly used for this purpose.

(Request Item No. C-24)

Sterling Drum Lift



Sterling hydraulic drum lift (Sterling, Fleischman Co.)

A new, improved drum lift which reportedly enables one man to handle steel drums (55 and 30 gal.), fibre drums (18" to 23" dia.), and acid carboys (13 gal.) has been announced by Sterling, Fleischman Co. Sturdy, of all-steel construction, the Sterling drum lift is rated at 750 lb. capacity. Lifting power is supplied by a foot-operated hydraulic jack. Drums can be raised for pouring to a height of 53". They may be stacked 2-high vertically. The center of gravity of the drum is always maintained within the 4 casters, making it impossible for the lift to overturn.

Four-inch oil, gas and spark-proof roller-bearing casters are normally supplied to move drums easily from one location to another. Eight-inch diameter or spark-proof conducting casters can be supplied on special order. An outstanding feature of the lift is said to be the easy-lock girdle which grips the drum firmly and is attached in a matter of seconds. It permits 360° drum rotation and allows the user to lift a drum safely and easily from floor for pouring, stacking or rotating to mix contents. Brakes on the drum-lift arms hold drum at any angle.

(Request Item No. C-25)

For the Mill Bookshelf

Waste Treatment

The Milton Roy Co. is offering a literature release on new technical data for water and waste treatment problems. Several practical systems for process and waste water treatment utilizing controlled volume pumps to meter chemicals and additives are described in the report, Technical Paper No. 64. In the area of water treatment, such processes as coagulation, clarification, boiler water treating and oxygen scavenging by Hydrazine addition are discussed in detail.
(Request Item No. C-26)

Business Mergers

Diversification In Business Activity, a 37-page analysis of the history and current significance of business mergers, consolidations, and acquisitions, by Roy A. Foulke, vice-president of Dun & Bradstreet, has been published by the credit reporting agency. Latest in an annual series begun in 1931, the special merger study examines the dangers of the current wave of mergers, which began in 1944, in the light of the 2 previous waves of mergers, the first extending from 1893 to 1903, and the second from 1918 to 1929. The first surge of mergers was characterized by "horizontal" consolidations—that is, trade combinations which united competing organizations in the same or closely allied line of industry. The second wave of mergers was characterized by a marked rise in holding companies. The current wave of mergers, now 12 years old, is characterized by "conglomerate" acquisitions. These are combinations of unrelated lines of business under a single ownership or management.
(Request Item No. C-27)

Rohm & Haas Chemicals

Rohm & Haas Co. is offering a revised edition of its *Chemicals for the Textile Industry*. The booklet, T25b, lists chemicals the company supplies to the textile industry. The products are classified in groups according to their main field of application. The groups include reducing and stripping agents, desizing materials, resin finishes, synthetic sizes, dispersing agents and surfactants. The revised booklet replaces all previous editions. (Request Item No. C-28)

Static Eliminating Equipment

The Portland Co. is offering Bulletin No. 72-A on its Chapman static eliminating equipment. The 4-page, illustrated bulletin points out that the Chapman static eliminators increase production, improve quality and reduce waste by eliminating static effectively, at low cost and safely. Current output for neutralizing is limited to 10 milliamperes. The eliminators, approved and listed by Underwriters' Laboratories Inc., are in use on more machines than any other static eliminator. The literature illustrates uses of the equipment on cotton and rayon carding, drawing, slashing and warping; felt and batt making machinery; and cloth finishing machinery.
(Request Item No. C-29)

Sizeometer System

Norcross Corp. is offering Bulletin No. V-1214, a 2-page illustrated circular on the Norcross sizeometer. The sizeometer, described as a completely automatic system for preparing sizing by cooking and mechanical agitation, offers these benefits, according to the bulletin: (1) prepares sizing in a fraction of the normal cooking time; (2) each batch is automatically finished to the desired viscosity; (3) produces a smooth, uniform size that does not continue to break down in storage or at the point of application; (4) viscosity is accurately recorded and controlled by a proven viscometer; (5) eliminates production delays and waste resulting from improperly prepared size; and (6) it can be used for all commercially available starches. The sizeometer system can be easily adapted to present cooking equipment, Norcross points out. (Request Item No. C-30)

Ethanolamines

A new 54-page technical data book describing ethanolamines is being offered by Allied Chemical & Dye Corp., nitrogen division. The book fully describes monoethanolamine, diethanolamine and triethanolamine, listing their applications, chemical and physical properties, physiological properties, shipping specifications, handling and storage features, and a comprehensive bibliography. Complete analytical procedures to determine specific gravity, weight, boiling range, color and odor are given. Graph illustrations include data pertinent to viscosities, vapor pressure, densities, freezing curves and other characteristics. The ethanolamines are new products of the nitrogen division manufactured by an improved process which assures high quality and purity. They are characterized by their wide diversity of use. Copies of the data book can be obtained by writing on your letterhead to this journal.
(Request Item No. C-31)

Vibration Mountings

A complete line of rubber-in-shear vibration mountings is described in a catalog released by T. R. Finn Co. Inc., specialist in shock and vibration controls. The vibration mountings, known as Finnflex rubber-in-shear vibration mountings, are specially developed high-deflection units used to isolate vibration, noise and shock caused by light and medium weight machinery. The catalog describes such construction features as the "floating action" of the precisely loaded rubber-in-shear that provides maximum flexibility and isolation. Resonance is avoided due to the inherent damping of the rubber and also because the spring rate is not constant. The rubber's low acoustical impedence reduces sound transmission, and its high overload capacity and cushioning action absorbs shock. Various types of vibration mountings, with load capacities ranging from 40 to 10,000 lbs., are described as are the non-walking base-plates that eliminate creep or walking and the need for lagging them to the floor. Write for catalog No. RS-55. (Request Item No. C-32)

Tension Control Unit

Dial Products Co. is offering a new catalog—No. 955—on its tension control unit. The unit provides fixed or variable tension control for applications such as high-speed thread winding. Range of the device is 0-50 oz.-ins. The designed is based on the Dial electro-magnetic clutch, which is converted to a tension unit at the factory by addition of the Dial slip attachment T. The control is said to be sensitive and accurate; and a wide range of torque values can easily and quickly be set by the user, either by adjusting the air gap or by varying the input power. The slip between the 2 members of the unit is smooth and constant, Dial points out, absorbing and leveling out undesirable surges of power. Where a number of tension controls are used as a group, they can be controlled simultaneously by a single rheostat or other electrical control. The unit is available in 2 sizes: Size 100 measures 1⅛" in diameter by approximately 1½"; Size 130 measures 1½" in diameter by approximately 2¾". The catalog gives full technical details and prices of the basic clutches, brakes and factory-applied tension attachment. (Request Item No. C-33)

High Pressure Pumps

The Gaulin horizontal Triplex pump is the subject of a new booklet published by the Manton-Gaulin Mfg. Co. Application of this high pressure pump in 10 different industries is covered, and there is illustrated data on the construction and operation of the mechanism. It shows 5 basic cylinder designs which meet the requirements of all pumping applications. A specification chart is included as well as graphs covering machine selection and typical power curves, useful for determining the correct model for specific applications. This new bulletin is numbered P-55. (Request Item No. C-34)

G-E Motor Control Center

A compactly-designed general-purpose motor control center which reportedly permits savings of up to 50% in floor area is de-

scribed in a new 24-page, 2-color bulletin available from the distribution assemblies department of the General Electric Co. The new publication describes in detail the construction and application of this G-E motor control center. It also lists ratings, weights, dimensions, installation data and guide form specifications. The G-E control center, known as the Type DA7093, is designed to accommodate starter units of either the fusible or circuit-breaker type in N.E.M.A. sizes 1 through 5. Its space-saving construction permits the use of up to 9 N.E.M.A. Size 1 or 6 N.E.M.A. Size 2 units in one 90"-high vertical section. It is available in ratings of 1 to 200 h.p., 110 to 600 volts, 3-phase with short-circuit capacities of 15,000, 25,000 and 50,000 amperes R.M.S. asymmetrical.

(Request Item No. C-35)

Corrosion Proofing

A new brochure on corrosion proofing materials and techniques containing detailed information on cement mortars, interliners for masonry construction and protective coatings and linings for surface treatment is offered by the corrosion engineering department of the Pennsylvania Salt Mfg. Co. The 8-page illustrated booklet, entitled *Corrosion Proofing*, contains sections describing the various Pennsalt materials for corrosion proof masonry construction and techniques for application based on studies of thousands of corrosion-proof masonry installations laid up in Pennsalt cement mortars over periods of 10 to 20 years. Tables and charts are provided for selecting proper cement mortars and determining resistance to various corrosive conditions. A section on surface applications of protective coatings and linings utilizes the experience developed through a program carried out in Pennsalt's own chemical manufacturing plants used as proving grounds for establishing comparative performance records under actual plant conditions. Charts are provided for general use in selecting Pennsalt coatings or linings suitable in various corrosive ranges. (Request Item No. C-36)

Meriam Manometers

A new bulletin (No. G-10) intended as a convenient, quick-reference guide to manometer-type instruments has been issued by The Meriam Instrument Co. The bulletin sets forth the 4 basic types of manometers ranging from the simple U-tube to the ultra-precision models and provides principles to aid in the proper selection. Specialized manometer instruments are also described for pressure, vacuum, flow and liquid level services as well as electrical contactor-type manometers and portable manometer kits for field instrument calibration. Range, working pressure, application and a brief description are given for each instrument.

(Request Item No. C-37)

Chemical Finishes

A new 26-page technical booklet, which reviews some of the newer uses for chemicals for the textile industry, has been released by Carbide and Carbon Chemicals

FOR THE MILL BOOKSHELF

Co., a division of Union Carbide and Carbon Corp. The booklet features Niatex antistatic AG-2, a new finish which reportedly gives durable protection against static build-up even after washing and dry cleaning. This antistatic agent is supplied in an aqueous solution and is ready to use after simply diluting with water. The booklet also reviews a wide variety of products useful as wetting and retarding agents for dyeing, as dispersing and pasting agents, and as solvent components of dyebaths. In addition there is a discussion of raw materials valuable in fiber synthesis and modification; and in the production of resin finishes. The newer uses of surface-active agents and water-soluble lubricants in textile processing are also examined.

(Request Item No. C-38)

V-Belt Drives

The origin, history and development of the modern multiple V-belt drive is discussed in a new 36-page pocket size booklet released by Allis-Chalmers Mfg. Co. The booklet also covers the evolution of standards in engineering V-belt drives, tells how to engineer a V-belt drive, provides tables and data, and describes modifications in V-belt drives. Final chapter of the booklet furnishes the answers to a number of questions relating to some of the basic principles and practices involved in the engineering and use of multiple V-belt drives.

(Request Item No. C-39)

Chromium Chemicals

A new 8-page 2-color brochure on its chromium chemicals—sodium bichromate, sodium chromate and potassium bichromate—has been issued by Columbia-Southern Chemical Corp. The booklet contains descriptions of the products, their properties and safe handling data.

(Request Item No. C-40)

Homogenizers

A new 6-page booklet (H-55) on the use and selection of industrial homogenizers has been prepared by Manton-Gaulin Mfg. Co. It shows features of the Gaulin homogenizer, cut-away views of the construction, and specifications. There is a capsule *Theory of Homogenization* and information on the various types of products which can be handled. Also included is a description of the 5 special Gaulin valve designs for handling fluid, viscous, slightly abrasive and very abrasive products. There is basic data for selection of the proper machine, covering over 100 distinct models, from 0 to 8,000 p.s.i. and up to 6,000 g.p.h. capacity.

(Request Item No. C-41)

Metalworking Catalog

Most effective cutting speeds for carbide tools, machine tool horsepower requirements, how to determine shank size of single-point tools, carbide tool geometries, carbide grade selection and other technical topics are covered in a new 66-page metalworking catalog issued by the Carboloy department of the General Electric Co. Besides information on the Carboloy machinability computer, the new 2-color publication, referred to as GT-310, also includes price and specification information on standard brazed carbide tools, tool holders, standard carbide throw away inserts, blanks for twist drills, dies, bushings, guide rings, balls, valve seats and many other applications. The publication also summarizes Carboloy's customer training courses on carbide tools and dies. (Request Item No. C-42)

Polyethylene Packaging

A new booklet, which describes why 16 leading manufacturers of soft goods are now packaging their products in polyethylene film, has been published by Bakelite Co., a division of Union Carbide and Carbon Corp. The 16 case histories demonstrate that there is virtually no limit to the application of polyethylene film as both a functional and promotional packaging material for soft goods, the company points out. The case histories described in the new booklet also indicate that polyethylene film can add the touch of glamour needed to convert a necessity into an impulse buy. Customers prefer to buy goods packaged in polyethylene, Bakelite states, because they know the contents are sanitary and undam-

aged by the handling of other shoppers. They like to see what they are buying and at the same time they are attracted by the manufacturer's printed specifications or guarantee. In addition, they like to reuse the film bags for storing a variety of household items. The new booklet, *16 Soft Goods Success Stories*, is available free on request.

(Request Item No. C-43)

Reliance Gearmotors

Reliance Electric & Engineering Co. is offering a new 8-page 2-color bulletin, *Reduce Speed* (E-2408), which describes the new line of Reliance gearmotors. The bulletin presents examples of the wide selection of types, mountings, enclosures and ratios available to afford custom gearmotors for all applications. A detailed 2-page cutaway view points out the extra features and attention to engineering design details that make the gearmotor line outstanding. Another section illustrates the simplified maintenance through ease of motor and gear replacement, with an exploded view of a typical gear assembly. The selection section explains the Reliance unit-type construction that allows for selection of gearmotors to exactly meet the user's specific requirements. Included in the listing are types of gearmotors, types of service, output speeds, horsepowers, electrical characteristics, enclosures and types of mountings.

(Request Item No. C-44)

Practical Textile Chemistry

(By J. W. Bell, Ph.D.; Chemical Publishing Co. Inc., 212 Fifth Ave., New York 10, N. Y.; $4.75)

This work simplifies the study of textile processing, identification and testing techniques as they developed from their empirical beginnings into an applied science. Its major part is devoted to wool. It contains 193 experiments divided into four main parts—structure and properties of wool; processing of wool; identification of faults; and special tests for animal fibers, silk, cotton, bast fibers, regenerated cellulosic fibers, cellulose acetate fibers, regenerated protein fibers, synthetic fibers, alginate rayon, glass fiber and asbestos. It gives also tests for mercerized cotton and crease-resistant fabrics, lignocellulosic fibers, and for the following fiber mixtures: wool and nylon, cellulose acetate and others, cotton and viscose rayon, cotton and regenerated cellulose, silk and nylon, wool and regenerated protein, cotton and viscose rayon, etc.

Serving The Textile Industry

John Foard To Offer New Rust-Proof Rings

John H. Foard

John H. Foard has announced that he has discontinued his connections with Ragan Ring Co. after more than 15 years and that he is going into the manufacture of spinning and twister rings with an associate, W. A. Kluttz of Kluttz Machine & Foundry Co., Gastonia, N. C. Mr. Foard reports that, under supervision of some of the nation's leading machine tool builders and, also, a group of leading metallurgical engineers, the most modern in machine tools, steel and finishing equipment is being installed in Gastonia at the Kluttz plant. Production of an entirely new rust-proof ring to meet and improve present day mill requirements is expected within 60 days.

Westvaco Chlor-Alkali Makes Research Changes

The research activity of the Westvaco Chlor-Alkali Division of Food Machinery & Chemical Corp. is being transferred to, and will become part of, the corporation's chemicals central research laboratory now under construction at Princeton, N. J. Dr. W. L. Davidson, former Westvaco Chlor-Alkali research director, has been appointed assistant director of the new facility. The research and development departments of Westvaco will be consolidated under the direction of William B. Rose, former development manager, whose headquarters will be at the South Charleston, West Va., plant of the division. Robert A. Bondurant, former staff assistant to the division president, has been named general service superintendent of the South Charleston plant. James G. Bronson, former product manager of chlorine and alkali sales, has been named staff assistant to the president of Westvaco's Chlor-Alkali Division in New York. John M. Richard, former product manager of phosphate sales, has been named product manager of chlorine and alkali sales in New York.

Hobbs Offering Engineered Winding Installations

Hobbs Mfg. Co., Worcester, Mass., manufacturer of the Hobbs-Alquist winder, is now offering complete installation service to its customers. Believed to be the first service of its kind offered in the field, the company's "engineered winding" program offers a complete analysis of a customer's winding requirements from start to finish. The firm's enlarged engineering staff is now able to design and manufacture winders and stands to solve any winding problems, it is said. Hobbs engineers also assist in setting up the installations and in getting them into satisfactory operation.

An "engineered winding" installation thus planned is complete when shipped and is fully ready to operate once it is installed.

Addition To Texize Chemical Plant Nearing Completion

An addition to the plant of Texize Chemicals Inc. at Mauldin, S. C., is scheduled for completion by the end of this month. The addition will add 72,000 sq. ft. to the firm's existing facilities and will permit faster handling of materials. The plant is to be integrated with the company's Greenville, S. C., plant to form a single, consolidated unit. Daniel Construction Co., Greenville, began work on the addition last December.

Barnes Textile Associates Merges With National Firm

Barnes Textile Associates Inc., consulting engineers with headquarters in Boston, Mass., is now a division of Scovell Worthington & Co., a national firm of management consultants. Barnes will continue to operate in much the same manner, it is said, except that it will now offer its services to others besides the textile industry. Barnes will retain its name under the new corporate setup, and Nathaniel Mitchell will remain as president.

Product Improvement Program Launched By Fletcher Works

Fletcher Works Inc., Philadelphia, Pa., manufacturer of narrow fabric looms, has begun a product improvement program which will extend over the next 24 months. According to Edward T. Taws, president of the firm, the program will concentrate on re-mechanizing to increase the output of the looms and improve the quality of the fabrics made. He pointed out that the field for narrow fabrics has expanded to the point where almost every industry is making increased use of narrow fabrics. "If we don't bring the output of the looms abreast of this multiplying demand," he said, "these markets are going to look for substitutes and turn elsewhere for materials."

Dow Chemical Planning $20 Million La. Plant

Plans for a new $20 million manufacturing operation, to be located in the Baton Rouge area of Louisiana, have been announced by The Dow Chemical Co. The company has taken options on 3 tracts of land on the west bank of the Mississippi with the expectation of building facilities to produce chlorine, caustic soda and several organic chemicals. Largest of the sites comprises 1,700 acres, while the other 2 are of 1,100 acres each. Dow anticipates exercising options on at least 1, and possibly 2, of the locations. Initial plans call for the investment of at least $20 million and the employment of approximately 500 people. Plans for the new operations are in line with the company's efforts to decentralize future expansion where economically feasible. Dow has manufacturing operations in 12 locations in 7 states.

Firm Offering New Line Of Material Handling Equipment

A new industrial division has been established by Massey-Harris-Ferguson Inc., Racine, Wisc. to market a full line of light and medium-duty industrial wheel tractors and material handling equipment, L. M. Sweeney, vice-president in charge of sales has announced. B. R. Bermann, formerly general service manager of the Ferguson Division, has been named sales manager of the new division. According to Mr. Bermann, the line is competitively priced and is designed to fill a recognized gap between light and heavy industrial equipment. "We expect to begin franchising outlets to achieve national coverage soon," he said. "Dealers, some of whom have already been selected, will handle the entire line, stock repair parts and provide complete service facilities."

Precision Gear Now Selling Direct

Precision Gear & Machine Co., Charlotte, N. C., has reorganized its sales force and expanded its machine shop, according to C. B. Bookout, sales manager. The company has changed from selling through agents and distributors to its own selling organization. G. F. Oberfell, formerly with Southern Dyestuff Corp., and R. K. Ballard, formerly with Whitin Machine Works and Alexander Machine Works, will cover North Carolina for the company, making their headquarters in Charlotte. Covering South Carolina out of headquarters at Greenville will be A. G. Laughridge Jr., formerly with Fafnir Bearing Co.

General Aniline Opens $6 Million Kentucky Plant

Manufacturing of high-pressure acetylene products on a full commercial scale for the first time in the U. S. got under way at Calvert City, Ky., last month when operations were started at the new $6 million plant of General Aniline & Film Corp. The new operation is the result of 14 years of research, pilot plant production and market development. One of the products

to be manufactured at the new plant is polyvinylpyrrolidone (PVP), which has achieved success in a variety of industrial applications. Its affinity for dyestuffs enables PVP to be used as a dyestuff stripping agent, and in the preparation of fugitive tints for fibers. In detergents it has been shown to prevent soil redeposition, to prevent or reduce the bleeding of dyes in laundering, and to reduce the irritation of harsh detergents. Its affinity for glass permits it to be effectively used as a size for glass fibers. The new plant will be operated by the dyestuff and chemical division of General Aniline & Film Corp.

Stein, Hall Announces Expansion Projects

Stein, Hall & Co. Inc. has announced that it is expanding and reorganizing its natural gums laboratory at Long Island City, N. Y., and will establish office, warehouse and manufacturing facilities in Charlotte, N. C. Land for the Charlotte expansion has already been purchased and bids for construction have been called. The manufacturing unit will have 35,000 sq. ft. of floor space. The natural gums laboratory has been divided into 2 sections—a development and technical services group and a quality control group. Facilities for the former are being set up while the latter will operate in the existing laboratory. The move is designed to keep in step with a continuing growth in the firm's natural gums business and is expected to lead to the development of many new products and new applications for existing products.

Weavings Corp. Appointed Agent For Russell Belting

Weavings Corp., 545 Fifth Ave., New York City, has been appointed national sales agent for the belting division of the Russell Mfg. Co., Middletown, Conn. Weavings Corp. will handle the sale of all solid woven, stitched canvas, endless transmission and special belting products made by Russell.

Vision Color Cards Moving To New Quarters

Marking its third expansion in 6 years, Vision Color Cards will move on April 1 to expanded new quarters at 21 Hudson St., New York 13, N. Y. The company, producer of color cards, swatch books, point of sale and similar swatched promotions for the hosiery and other industries, is presently at 72 Park Place, New York City.

Du Pont Realigns Textile Fiber Sales Management

Du Pont is locating a major segment of its textile fibers sales management in the field to better serve its customers, the company has announced. The move calls for the immediate appointment of regional sales managers in New York City; Philadelphia, Pa.; Providence, R. I.; and Charlotte, N. C., who will have direct responsibility for the sale of all five Du Pont fibers in their regions. District offices at Chicago, Ill., and Reading, Pa., and the special industrial sales section presently at Wilmington, Del., will now operate under the Philadelphia regional manager. Under the new setup each region will continue to have sales staffs specializing in particular fibers and headed by district managers who will report to the regional manager instead of the Wilmington office. The action also includes plans for opening a regional sales office at Akron, Ohio, in the near future. This office will handle sales of those fibers used by the rubber industry.

Ford B. Draper, general director of sales, said this is "a further step toward carrying out a marketing concept initiated 14 months ago when the department established its merchandising division to make it more responsive to customers' needs. The present move reflects the logical development of our efforts to provide our customers with better service. It puts additional direct sales help near the customer by locating a major segment of sales management directly in the customers' area."

Mr. Draper also disclosed another change in the sales organization—the creation of a sales programs division located at headquarters in Wilmington to provide improved internal co-ordination of sales plans and programs with manufacturing and research. Raymond C. Grills, manager of industrial sales, was named director of the new division, reporting to J. A. Dallas, assistant general director of sales.

To implement the new regional sales organization, Truman C. Welling, manager of sales for Dacron polyester fiber, was named to a newly-created position of assistant director of sales, reporting to A. M. Saunders, director of that division. Richard W. Trapnell III, manager of women's wear merchandising section, was also named to a newly-created post of assistant merchandising director, reporting to Henry C. Froehling, director of merchandising.

New regional sales managers are: Charlotte, Millard G. Gamble, former assistant sales manager for nylon at the Wilmington office; New York, Charles D. Wenrich, former New York district sales manager for nylon; Philadelphia, V. Ward Smith, former sales manager for acetate at the Wilmington office; Providence, H. G. Buckley, former sales district manager for rayon at the Providence office; and Akron, Howard P. Brokaw, former assistant manager for industrial sales in Wilmington. His headquarters will remain in Wilmington until the Akron office is established. The export sales offices will continue to operate in Wilmington and New York under the direction of L. B. Dennett.

The new managers of the sales programs division are: rayon and acetate, W. D. R. Staughn, formerly head of rayon sales; Dacron polyester fiber, George H. Braniff, formerly manager of technical service section; nylon, James O. Graves, formerly assistant manager, advertising and promotion section; Orlon acrylic fiber, George S. Demme, formerly manager Orlon sales; and new products, William L. Hyden, formerly manager development section. James S. Rumsey, assistant manager of women's wear merchandising section, was named manager of that section, succeeding Mr. Trapnell. Charles E. Mears, formerly manager of nylon sales, was named manager of the industrial merchandising section, a position which has been unfilled since the appointment of Russell W. Peterson to director of textile and industrial products research division several months ago. Otto J. Lutness, assistant manager of the technical section, was named manager, succeeding Mr. Braniff.

Duplan Corp. Opens New Technical Service Dept.

A new, enlarged technical service department has been announced by W. A. Wood Jr., sales manager of the throwing division of The Duplan Corp. This department is now operating at the Charlotte, N. C., office of the company, and combines and enlarges the functions of several former development groups which conducted research and technical operations. Michael Strub, who has conducted technical development for the company for years, is manager of the department. Francis Potter is assistant manager.

Haas Miller Corp., 4th & Bristol Sts., Philadelphia, Pa., has changed its corporate name to Harry Miller Corp. The firm has served the textile industry for 20 years, marketing numerous chemical products, oils and greases.

Neville, Walls, Miss Sharp, Senator Sparkman

WELCOME HUYCK—Citizens of Aliceville, Ala., recently staged a big welcoming party honoring officials of F. C. Huyck & Sons, Rensselaer, N. Y. Huyck is presently completing in Aliceville what will be the South's largest and most modern felt mill. Principal speaker at the welcoming session was Senator John Sparkman of Alabama, Democratic vice-presidential nominee in 1952. The senator pointed out that with the completion of Huyck's new $4 million plant, which will employ some 300 people, the investment in new plants and expansion of existing facilities in Alabama would total $361 million, creating 14,446 new jobs. Responding for Huyck, E. D. (Dusty) Rhodes, vice-president, sketched the 86-year history of the company and observed that the Aliceville plant would substantially increase the company's productive capacity. Others taking part in the event included a number of Huyck officials, and Miss Joanna Sharp, Alabama Maid of Cotton, shown *(above)* with Senator Sparkman and R. B. Neville and G. E. Walls, Huyck service engineers. The new plant is scheduled for completion April 30.

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textile bulletin

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; three years payable in advance, $3.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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The Bowl Of Rice Economy

J. Craig Smith, president of Avondale Mills, recently came up with that phrase, "bowl of rice economy," with which the Japanese may be satisfied, but with which the U. S. industry would hardly be content, even if that were possible. It would have to go completely out of business first, turning the whole U. S. cotton textile market—and dominance of the vastly shrunken cotton agriculture—over to the Japanese.

What, one might naturally wonder, is the "bowl of rice" economy? It is a good question. It must sound a little fantastic to that mythical person, the man-in-the-street, or the typical newspaper reader, when he is told that Japanese textile workers, for instance, get only a tenth of the wage level of their American counterparts. It must be a little disconcerting to him, too, to read that because of our agricultural laws, the Japanese textile manufacturer buys his cotton, or most of it, at considerably less than U. S. mills pay. Now, with the new $1 an hour minimum wage law in effect, the wage gap probably is greater.

Some of the free traders or One World thinkers would seem to imply that U. S. efficiency can be increased at will to meet such low-wage foreign competition. The fact is that internal competition sees to it that maximum efficiency is being striven for at all times. And at any given moment, efficiency is at the highest attainable level at that moment. Efficiency isn't something that can be turned on and off like a head of steam. And the striving for greater efficiency exists abroad, no less than in the United States.

The U. S. textile industry has attained its world leadership because efficiency directed to cost reduction in cents per pound has never dominated the other efficiencies which are directed to better values in the product, expanding consumption, and high living standards for the workers. And the basis for our high standards here in the United States is that under our economy there is a three-way, equitable split of the benefits of increased productivity among the workers, the stockholders and the consumers—the consumer benefit coming in the form of lower prices.

But that, obviously, is not the way in Japan, with its cartelized economy. The Japanese wage rate in textile mills is about 13 cents an hour. Such alone would seem to be a competitive advantage which could never be surmounted or overcome here. But astute men who have gone to Japan and studied that country's textile industry say that the Japanese textile worker, even under such a fantastically low wage scale, exceeds his U. S. counterpart in employee attitude, efficiency and artistic skill.

Marion W. Heiss, vice president of Cone Mills Corp., who has made two extended missions to the Land of the Rising Sun to observe industry conditions there, outlined these Japanese competitive advantages in a recent address before the Greater Charlotte Textile Club. In Japanese mills, he said, he encountered everywhere "a smiling, happy attitude of people who seem to love to work, and I didn't see a single sultry frown."

"And when you consider the efficiency of people who seem to love to work, you've really got something," he continued. "I would say that on a time-study basis, Japanese workers could get a rating of about 85, while our own workers here have to push hard to get up to a top rating of about 70."

And on top of that, he reported, Japanese textile mills are now more modern than U. S. mills. They are air-conditioned, and equipped with latest machinery. This is partly the result of direct U. S. aid. And Japanese mills have instituted quality controls to insure high-quality textile goods for sale abroad. Most of the Japanese production is, of course, for export. Japan is now the top exporting nation in cotton textiles, textile machinery and synthetic textiles;

and when it comes to inherent artistic skill, they are making enormous strides in textile design.

For any understanding of the situation, it is well to realize that the vast difference between U. S. and Japanese wages is not so simple as it would appear to be on the surface. It is a much more complex matter than that. In a study of the Japanese a few years ago Dr. Claudius T. Murchison, then economic adviser to the A.C.M.I., pointed up this fact.

In the interest of fairness, he said, it is essential in any discussion of Japan's economic position internationally to take for granted her necessity for relatively low wages. The simple fact is that Japan has an intelligent and hard-working population "which conceives a relatively high living standard to be compatible with the satisfaction of wants which are few and simple."

On this foundation, the price and wage structure of Japan is built and without it she could not hope to maintain an export trade "which is wholly composed of products which are competitive with the exports of western countries," he noted. Thus, to a large but definable degree, Japan's wage disparity is not of itself a condition of internal exploitation, but a prerequisite to the maintenance of her livelihood as a nation, and the servicing of the low wage areas which are her natural markets. Today, however, the Japanese service other than their natural markets.

So, no matter how many American textile jobs are displaced by Japanese goods entering this country, it does not mean a comparable benefit to the Japanese textile worker. Various news service dispatches from American correspondents in Tokyo have related in recent months the vastly improving, if not booming, status of the Japanese economy.

One of the more recent of these dispatches relates government statistics show that Japan, broke at the end of World War II, was selling its wares abroad at a rate of 190 million dollars monthly at the end of 1955. The prewar export yearly average was two billion dollars. Last year the total was only 20 million dollars under that figure.

Long before these figures were available, the U. S. textile industry was trying to get across the fact that the picture of Japan's economic plight, as presented by the planners of U. S. foreign economic policy, was a very much over-drawn and exaggerated one. It will be recalled that a dismal picture of Japan's outlook was presented rather graphically by the State Department in the Autumn of 1954 at the very time it was planning the tariff concessions subsequently made to Japan at the Geneva conference in the Spring. Yet by the Spring of 1955, when the textile tariff

TEXTILE INDUSTRY SCHEDULE

— 1956 —

Apr. 5-6 (Th-F)—Spring meeting, **CAROLINAS SEC., AMERICAN SOCIETY FOR QUALITY CONTROL**, Clemson House, Clemson, S. C.

Apr. 5-7 (Th-Sa)—Annual meeting, **A.C.M.I.**, Hollywood Beach Hotel, Hollywood, Fla.

Apr. 7 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Sir Walter Hotel, Raleigh, N. C.

Apr. 9-12 (M-Th)—**NATIONAL PACKAGING EXPOSITION** (in conjunction with packaging conference of American Management Assn.), Atlantic City (N. J.) Auditorium.

Apr. 11-13 (W-F)—Annual convention, **ALABAMA COTTON MFRS. ASSN.**, Buena Vista Hotel, Biloxi, Miss.

*Apr. 13-14 (F-Sa)—**COTTON MERCHANDISING CLINIC** (sponsored by Cotton Economic Research, University of Texas), Commodore Perry Hotel, Austin, Tex.

Apr. 19-21 (Th-Sa)—Annual convention, **PHI PSI FRATERNITY**, Alabama Polytechnic Institute, Auburn.

Apr. 21 (Sa)—**TEXTILE OPERATING EXECUTIVES OF GEORGIA**, Hightower Textile Building, Georgia Institute of Technology, Atlanta.

*Apr. 21 (Sa)—**EASTERN CAROLINA DIV., S.T.A.**, School of Textiles, North Carolina State College, Raleigh.

Apr. 25-28 (W-Sa)—Annual convention, **COTTON MFRS. ASSN. OF GEORGIA**, Emerald Beach Hotel, Nassau, Bahama Islands, British West Indies.

Apr. 27 (F)—**SOUTH CAROLINA DIV., S.T.A.** (Pelzer Mills as host), Pelzer, S. C.

Apr. 27-28 (F-Sa)—Annual convention, **DELTA KAPPA PHI FRATERNITY**, Atlanta, Ga.

*Apr. 28 (Sa)—**SOUTH CENTRAL SEC., A.A.T.C.C.**, Hotel Patten, Chattanooga, Tenn.

May 2-3 (W-Th)—Spring meeting, **THE FIBER SOCIETY**, Clemson House, Clemson, S. C.

May 2-4 (W-F)—Industrial safety conference, **NORTH CAROLINA INDUSTRIAL COMMISSION**, Charlotte (N. C.) Hotel.

*May 3 (Th)—Annual meeting, **NATL. ASSN. OF WOOL MFRS.**, Waldorf-Astoria Hotel, New York City.

†May 5 (Sa)—**PIEDMONT DIV., S.T.A.**, Hickory (N. C.) Hotel

May 9-11 (W-F)—Insurance conference, **A.M.A.**, Hotel Roosevelt, New York City.

†May 12 (Sa)—**NORTHERN NORTH CAROLINA-VIRGINIA DIV., S.T.A.**, Y.M.C.A. Building, High Point, N. C.

May 23-25 (W-F)—General management conference, **AMERICAN MANAGEMENT ASSN.**, Hotel Roosevelt, New York City.

May 31-June 2 (Th-Sa)—**SOUTH CAROLINA TEXTILE MFRS. ASSN.**, The Cloister, Sea Island, Ga.

June 5-8 (Tu-F)—**MATERIALS HANDLING INSTITUTE EXPOSITION**, Cleveland (Ohio) Public Auditorium.

June 8-9 (F-Sa)—**COTTON BUYERS & CLASSERS DIV., N.C.T.M.A.**, Grove Park Inn, Asheville, N. C.

June 8-9 (F-Sa)—Annual outing, **PIEDMONT SEC., A.A.T.C.C.**, Mayview Manor, Blowing Rock, N. C.

June 17-22 (Su-F)—Annual meeting (in conjunction with apparatus exhibit), **A.S.T.M.**, Chalfonte-Haddon Hall, Atlantic City, N. J.

June 21-23 (Th-Sa)—Annual convention, **SOUTHERN TEXTILE ASSN.**, Mayview Manor and Green Park Hotel, Blowing Rock, N. C.

*June 22-23 (F-Sa)—Annual outing, **SOUTH CENTRAL SEC., A.A.T.C.C.**, Lookout Mountain Hotel, Chattanooga, Tenn.

Sept. 6-7 (Th-F)—Fall meeting, **THE FIBER SOCIETY**, Warwick Hotel, New York City.

Sept. 10-15 (M-Sa)—**PERKIN CENTENNIAL** (sponsored by various professional societies and trade associations), Waldorf-Astoria Hotel, New York City.

Sept. 13-15 (Th-Sa)—National convention, **A.A.T.C.C.**, Waldorf-Astoria Hotel, New York City.

Sept. 27-28 (Th-F)—Annual meeting, **COMBED YARN SPINNERS ASSN.**, Cavalier Hotel, Virginia Beach, Va.

Oct. 1-5 (M-F)—19th **SOUTHERN TEXTILE EXPOSITION**, Textile Hall, Greenville, S. C.

Oct. 6 (Sa)—Annual meeting, **PIEDMONT SEC., A.A.T.C.C.**, Charlotte (N. C.) Hotel.

Oct. 11-12 (Th-F)—Annual meeting, **NORTH CAROLINA TEXTILE MFRS. ASSN.**, The Carolina, Pinehurst, N. C.

*Oct. 13 (Sa)—**TEXTILE OPERATING EXECUTIVES OF GEORGIA**, Hightower Textile Building, Georgia Institute of Technology, Atlanta.

Oct. 16-19 (Tu-F)—**COMMITTEE D-13 ON TEXTILES, AMERICAN SOCIETY FOR TESTING MATERIALS**, Warwick Hotel, New York City.

Nov. 27-30 (Tu-F)—**NATIONAL CHEMICAL EXPOSITION** (under auspices of American Chemical Society), Cleveland (Ohio) Public Auditorium.

*Dec. 1 (Sa)—**SOUTH CENTRAL SEC., A.A.T.C.C.**, Hotel Patten, Chattanooga, Tenn.

— 1957 —

*Jan. 28-29 (M-Tu)—Annual meeting, **NATIONAL COTTON COUNCIL OF AMERICA**, St. Louis, Mo.

Apr. 4-6 (Th-Sa)—Annual convention, **AMERICAN COTTON MFRS. INSTITUTE**, Palm Beach Biltmore Hotel, Palm Beach, Fla.

‡Fall—National convention, **AMERICAN ASSN. OF TEXTILE CHEMISTS & COLORISTS**, Boston, Mass.

**Listed for the first time this month.* *‡Tentative listing.* *†Changed or corrected from previous issue.*

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday

cuts were actually negotiated at Geneva, statistics revealing a remarkable improvement in the Japanese international payments position were already a matter of recorded fact.

Now, amid growing prosperity, there is evidence that all is not happiness among the Japanese industrial workers. Recent news service dispatches quote Akira Iwai, head of Japan's big General Council of Trade Unions, as saying industry's determination to exploit workers is the reason the Japanese government opposes the council's Spring campaign for a wage increase.

Management, Iwai says, is making good profits, with foreign trade now approaching prewar levels, but management is very anxious to keep costs down. He explains the situation like this: "Japanese industrialists are not like those in America. Here they always consider the workers last."

The Japan Federation of Employers' Associations denies that Japanese industry is making good profits:

> There may be several making money . . . superficially, it stated in a recent pamphlet, but not all. The smaller industries are struggling. We favor individual merit raises, but not across the board. . . . We must accumulate capital . . . Our costs must be kept low to sell in Asia.

But this is the picture union leader Iwai gives:

> The average industrial worker in Japan makes about 14,500 yen ($38.92) a month. If you include small workshops, the average drops to about 10,000 yen ($27.80). This average worker is a man with a wife and three children. It has been estimated that such a family needs at least 17,000 to 18,000 yen ($50) monthly for a minimum standard of living.
>
> We are trying to raise that gradually, but right now all we're asking is 2,000 yen ($5.56) increase a month.

Japan's relative prosperity, as one American correspondent in Tokyo noted in a recent dispatch, seems to be getting embarrassing.

A Glimmer Of Hope?

Hints persist in some usually well-informed quarters of the raw cotton trade that the alliance between growers and spinners has neither been discarded nor forgotten by the Administration and that diplomatic moves have been started which could lead to a negotiated agreement between this country and Japan on cotton goods imports.

According to these reports, there first would be a conference between the United States and Japan and the representatives of their respective textile industries. After a deluge of Japanese goods caused a price collapse of the U. S. industry in the late 1930s, an informal or "gentleman's" agreement between U. S. and Japanese industries was entered into but was allowed to lapse when the United States Government revealed it considered such a private agreement as lacking legal authority under the law.

While there has been no confirmation of the presently rumored State Department maneuvers, the current pressures for a quota system by domestic growers and spinners could obviously pose a serious threat to the Eisenhower foreign trade policies and could force the first breach in the wall the executive branch has raised against the quota device to protect manufactured goods.

The Department of Agriculture's decision finally on a bold program to relieve the massive pressure of the cotton surplus by offering it to foreign buyers at a "fire sale" price intensifies, of course, the drive for a quota system on

imported cotton goods. For unless the whole cotton problem is approached as an indivisible one there must be an endless dilemma of trying to solve one problem while only making another one worse.

The export plan, which is actually a two-price system, is aimed at regaining U. S. raw cotton's historic share of the world market, considered to be about five million bales a year. Representative Gathings (D., Ark.), author of a "single package" bill, observed that the new cotton export sales program "only intensifies the need for control of cotton textile imports." He said the U.S.D.A. action creates a new set of conditions that justifies holding his bill in abeyance for a while, allowing the administration to take executive action on the import problem or, perhaps, government-to-government negotiation.

He added, however, that if the Administration does not move promptly, he will push his bill. And it appears that during December, for the first time in modern history, imports of cloth and apparel from foreign countries, translated into yardages, were greater than exports from the United States by three million yards.

The sudden appearance of around 12 million bales of U. S. cotton on the export markets over the next two years or so obviously would discourage the expansion of cotton production elsewhere. Some countries which have been converting more and more acreage to cotton because of the higher return, probably would return to producing a greater amount of their food supplies.

An expanded sales program like the present one has long been opposed by the State Department, since cotton is a virtually imperishable international commodity and it was feared such a policy might endanger relations with friendly cotton-exporting countries. In fact, announcement of the U.S.D.A. plan produced immediate objection by Egypt and an embassy statement represented the Egyptian Government as being "most unhappy" about the step which it considered "very unfortunate at this time."

Secretary Benson has promised, however, the cotton sales will be made in an orderly manner so as to avoid disrupting world market prices and impairing the traditional competitive positions of friendly countries. Announcement of the new plan followed closely completion of the administration's earlier plan of selling overseas a million bales of 15/16-inch and shorter staple cotton at six to eight cents a pound below domestic market prices, or at about the world price.

The raw cotton export program is intended to regain for the U. S. growers an "historic" share of the world market figured at around five million bales annually. Coupled with a current U. S. consumption rate of around 9,000,000 bales, this would provide a yearly offtake of about 14 million bales. On paper, at least, this would seem to indicate that there probably would be no need for further U. S. acreage reduction.

U. S. cotton producers have drastically reduced their acreage but in the same time foreign acreage has zoomed by

almost the same amount as our price supports have held an umbrella over the world market. Such a situation, in large measure but not altogether, has contributed to the build-up of the costly and unmanageable U. S. surplus.

There are some other aspects also. While cutting acreage, American growers have seen their yields per acre increase spectacularly. The center of cotton production has been and is rapidly shifting westward and with acreage continuing to be restricted to the best and irrigated land, there are many who are convinced that yields per acre will move further upward.

Cotton has come to be a regressive economy within a progressive national economy. It has not fully benefited in terms of the upward trends of the growth of population and productivity. According to the Department of Agriculture, domestic mill consumption of synthetics in 1955 was about 32 per cent greater than during 1950, despite the current high level of domestic cotton consumption. In this same five-year period cotton acreage was reduced 40 per cent.

The high price support of cotton, Earl L. Butz, Assistant Secretary of Agriculture, noted in a recent address, has spurred production of synthetic fibers so that today synthetics are produced in an amount equivalent to 3.5 million bales of cotton annually. At the same time, world synthetic fiber production is the equivalent of about 13 million bales of cotton annually.

The Cotton Belt has in the last few years become poignantly aware that unless cotton can be made competitive both on the export market and against synthetics in the domestic market, the U. S. cotton economy must continue to wane, with growers turning their acreage to crops that are competitive with other parts of the nation.

Taking The Minimum In Stride

Government and private economists for several months to come will be keeping the weather vane out for signs of the impact upon the South's industry and economy of the new $1 an hour minimum wage.

This is because wages are relatively lower in the South, and out of the two million workers whose wages were affected by the new minimum that went into effect on March 1, more than half of them are in the 17-state region from Texas to Maryland.

So far there has been no outward indication of any serious dislocation but whatever dislocation there may be isn't expected to become apparent overnight. There are already some moves, however, to maintain differentials by boosting wages at higher levels.

Within virtually a matter of hours after the new minimum went into effect, a union official said at Charlotte that organized Southern textile workers will use the $1 minimum as a wedge to build up higher wages.

Boyd E. Payton of the Textile Workers Union of America said that notice has been served by 43 T.W.U.A. Southern state locals to reopen contracts with their employers and negotiate demands for substantial wage increases.

Payton said textile workers under union contract have a minimum scale of $1.08½. "However," he added, "textile workers are not content to see other workers move up to $1

from 75 cents without receiving a substantial increase in their own earnings."

The over-all impact in the South is expected to be about three times that of any other region. While the minimum wage boost affects only about one out of four of the region's workers in manufacturing, four out of five of its workers in the sawmill industry are involved.

Some economists have held the boosting of the minimum from 75 cents to $1 an hour may push some marginal operators out of business and others will find it expedient to use machines on jobs which are now done manually. Earlier boosts came at a time of war-threat inflation, they cite.

But Newell Brown, administrator of the Wage and Hour Division of the Labor Department, after a swing through the South to obtain first-hand knowledge of regional problems, discounted fears of a serious threat to small Southern businesses.

Such fears, he commented on a stop-over in Atlanta, are not justified on the basis of past experience. He said a number of such forecasts were made in 1950 when the minimum was hiked from 40 to 75 cents, but subsequent events failed to bear out most of such predictions.

Half of the new personnel the wage and hour division is adding to its investigative staff will be assigned in the South. Some field office administrators have commented that there apparently are not as many complaints about the March 1 increase as there were in 1950.

Textiles constitute the major manufacturing industry in the Southeast and nearly all workers in spinning and weaving mills already earned $1 an hour before the March 1 minimum went into effect except in some instances of non-production categories outside the plant.

Highest proportions of workers affected by the new minimum, other than in sawmills, are in divisions of the garment and apparel manufacturing industries, tobacco stemming and redrying, candy manufacturing and footwear.

On government work involving over $10,000 a wage determination by the Secretary of Labor, under the Walsh-Healey Act, raised the textile industry wage minimum from 87 cents to $1 an hour back in the Fall of 1952, but the order was stayed by federal court litigation, still pending, challenging the secretary's authority to fix industrywide minimum wages under the statute.

A three-day conference on "Fabric Quality and Informative Labeling," sponsored by the International Rayon and Synthetic Fibers Committee, Paris, France, will be held in Gothenburg, Sweden, starting Oct. 1. Scheduled to address the opening session is J. B. Goldberg, consultant, whose topic will be "Informative Labeling and Quality Control in the U. S. A." Other American speakers include E. Freedman of the bureau of standards, Macy's Department Store, New York City; and L. Leach of E. I. du Pont de Nemours & Co. Inc. Mr. Freedman's topic will be "The Exercise of Quality Control in Department Stores," and Mr. Leach will speak on "Comfort Factors in Wearing Apparel." Other speakers at the conference will include representatives from Great Britain, France, The Netherlands, Italy, Germany, Norway and Sweden.

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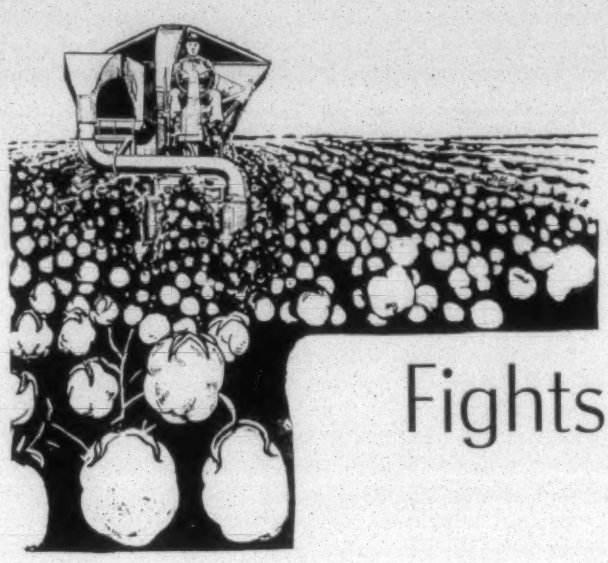


Dark Clouds Over White Fields—

Cotton Economy Fights For Its Survival

— A Staff Report —

THE vagaries of nature and economics, or indeed sometimes a seeming conspiracy of the two, have made the so-called "cotton problem" no stranger to the national scene since almost the beginning of the republic. The specter punctuates the economic history of the South. But now, the direct result of unrealistic thinking in Washington, particularly in regard to some aspects of U. S. foreign economic policy, the whole cotton economy—agriculture and manufacturing—stand truly at the crossroads.

The indivisible cotton problem—the swollen surplus, the vanishing world market for the domestic fiber, the frightening spiral of imports of foreign cotton goods, apparel and finished cotton products—must be resolved to a considerable degree in the coming weeks, or the present generation will be the witnesses to a succession of fantastic events which history might well refer to a decade or so from now as another "American Tragedy."

Oddly enough, the situation, or the progress toward the solution of the ever-widening dilemma, is almost identically where it was at the same time last year, in that appropriate rectifying action must be taken by administrative decree or action by Congress. The State Department seems as adamantly opposed as ever to any solution which would be satisfactory to the mill industry and to agriculture. Obviously the administration would like to avoid, particularly this year, the embarrassment of so explosive a fight in Congress, but the odds appear that it is in Congress where the showdown will come.

Yet while the situation is basically the same as it was last Spring there are some significant new overtones. For one thing, President Eisenhower made it clear at a recent press conference that he would veto any bill containing a quota limitation on the imports of cotton goods and apparel. On the other hand, never has the whole cotton industry—producers and manufacturers alike—become so united on so major an issue, involving the "single package" idea of regaining U. S. cotton's traditional world markets and at the same time protecting the domestic mill industry from low-wage foreign competition through global import limitations.

To the cumulative drive of the American Cotton Manufacturers Institute over the past year has recently been added the powerful voice of the National Cotton Council and other producer and agricultural groups. The action taken by the council at its Biloxi convention, endorsing an import quota plan, is an epochal one in the history of the cotton industry.

The Cotton Council's program for the ensuing year is highlighted by commitments to work for expanded exports and action to limit imports of textile manufacturers "to a reasonable amount." This marks a sharp break with the council's policy in effect since its founding, and if progressively pushed, it may wring from the administration policies which would accomplish these objectives.

The council, of course, is made up of all segments of the cotton industry. The shippers have traditionally been basically opposed to the idea of a quota on cotton goods imports. A plan for expanded exports at competitive prices was also a somewhat bitter dose for them, as they have opposed any kind of two-price system. Yet, apparently realizing that cotton is faced with a fight for its survival, they went along with the majority for the package deal. Thus the council is able to present a unified and industry-wide voice in cotton's present critical plight.

Whether cotton takes one turn in the road or the other is contingent largely upon how the administration or Congress solves the problem of raw cotton exports and spiraling cotton goods imports at a time when cotton agriculture struggles under the severest acreage and production cut-backs ever known, only to see excess cotton continue to

pile up here while foreign countries are increasing production, under-cutting U. S. prices and capturing world markets.

Experts say domestic consumption of cotton can reach 15 million bales by 1975 if per capita use holds up at the present level and if, 20 years from now, cotton can still retain the same percentage of the total fiber market that it now has—roughly about 70 per cent. For this to be considered possible or likely, there obviously must be a vigorous and confident domestic textile industry which can continue to improve its processes, develop new products and expand the home market of cotton.

U. S. mills, which 40 years ago consumed only around five million bales, now use almost twice as much and presently provide the offtake for about 80 per cent of the domestic crop. And the cotton farmers, tooled up three years ago for 25 million acres, have cut back to around 17 million three years in a row. Yet surplus stocks are at an all-time high as cotton production has skyrocketed in other countries, stimulated by U. S. capital and U. S. technical aid.

The U. S. import quota on raw cotton of the upland type is 29,000 bales. The government has maintained for 16 years that this quota is essential to preserve the home market for the American grower. Yet an estimated 200 million yards of Japanese cotton goods entered the U. S. last year—a 20-fold increase since 1952. Most of the cotton in these imports is foreign-grown cotton. It is equivalent to the import of several times 29,000 bales of foreign cotton.

It was on this ground—such imports undermining the whole U. S. cotton support program—that the American Cotton Manufacturers Institute petitioned the Secretary of Agriculture to set up an equitable quantitative limitation of cotton goods imports, which Section 22 of the Agriculture Adjustment Act authorizes him to do under such a circumstance, and a course which the cotton producer as well as other industry groups have strongly endorsed, taking the view that anything which drains off the textile industry's strength necessarily hurts the cotton farmer by shrinking his market.

The Agriculture Department, in effect, has admitted it can take such action under Section 22 but sees no justification for action now. Thus it has not entirely closed the door. All this was revealed by Earl Butz, the assistant secretary of Agriculture, during his testimony at the House committee hearings on the Abernethy-Gathings bill which proposes to expand raw cotton exports by the government on an unlimited scale and also to set up cotton goods import quotas.

Assistant Secretary Butz disclosed that the department plans to initiate soon an expanded cut-rate raw cotton export program, observing that legal authority to do this already exists and that there is no necessity for further congressional action which, it was felt, could complicate the administration of such a program.

At the same time Mr. Butz turned down the plea of the cotton industry for import quotas. He said studies made by the department indicate that quotas are not needed "at present." And he added that if a real threat develops as the result of a stepped-up cotton export program Section 22 of the Agricultural Adjustment Act would provide adequate authority for remedial action.

Meantime, the omnibus farm bill as it emerged from the Senate Agricultural Committee encourages the sale of surplus U. S. raw cotton at competitive prices in the world export market, but does not contain any provision for an import quota on foreign-made cotton goods or apparel. So the fight, before the ultimate outcome is known, may be a long-drawn out one.

The problem, in essence, is how to preserve cotton's total market from unfair foreign competition, and the pressures for a satisfactory and lasting solution are coming to be over-riding. And the pressures increase as the disturbing trend in foreign cotton production relative to foreign consumption throw into sharp relief the essentiality of a rising ratio of U. S. cotton consumption to U. S. production.

Even some months ago it began to become rather apparent that the concerted campaign, naturally sparked by the mill industry, for a "one package" solution was whipping up widespread support throughout the Cotton Belt. Then came the news from Tokyo that the Japanese were planning to set up a voluntary plan of controls on cotton cloth exports to the United States.

This naturally caused considerable fear that such a move might have the effect of blunting the driving force of the cotton industry's snowballing efforts for import quotas on cheap-labor cotton goods imports. And it was viewed, too, as possibly making somewhat ineffective the drive of some other industries to band together and get Congress to control imports.

Subsequently the question was raised in some quarters as to just how voluntary the action was on the part of the Japanese government in moving to place restrictions on the volume of cotton textile imports to the United States. There was, certainly, no coercion. There was, neither, no bilateral negotiation. Yet press accounts subsequently disclosed that Secretary of State Dulles, in a letter to the New England senator, suggested that some of the thinking of the Japanese along the line of controlling the tide of shipments to the United States was in response to an appeal which he made himself.

There is hardly any other interpretation that could be placed upon such an appeal other than its being a maneuver to ease political pressures in an election year. And conceding that any limitation on the volume of rising cotton goods imports into this country is a constructive move in the right direction, such a self-imposed limitation by Japan, while having its certain aspect of irony, hardly removes in any degree whatsoever the element of uncertainty that has been and is continuing to hurt the U. S. mill industry about as much as the actual inrush of the goods.

The next chapter in this unfolding drama or tug-of-war between a basic American industry, fighting for its actual survival, and an administration policy which apparently has long been that the cotton industry is a "natural" sacrificial offering on the altar of international good will, came with the dumping of the problem of import quotas directly in the already over-crowded lap of Secretary of Agriculture Ezra T. Benson.

A reasonable case indeed, through the most lucid of arguments and accompanying facts and figures, was made by the

mill industry for the validity of action by the Secretary of Agriculture on the administrative level. And such a move at the administrative level quite obviously would remove a bitter and highly controversial fight in the halls of Congress on an issue that not only deeply affects the future of the U. S. cotton industry but quite naturally would have its repercussions around the world.

Crux of the A.C.M.I. petition was that the volume of cotton goods imports, when translated into the equivalent of raw cotton, bypasses the raw cotton support program and cumulatively injures and imperils it. And submission of the document came at a time U. S. textile manufacturers found themselves having difficulty indeed going along with public statements by two members of the Administration's cabinet—Secretary of State Dulles and Secretary of Commerce Weeks.

In effect, the Dulles statement was that the Japanese are taking "effective" action to prevent any excessive exports of textile goods to the United States and that Japan's voluntary action should take care of the situation without requiring any action by Congress in imposing import quotas. The Weeks' statement, in somewhat similar vein, made it apparent that he also is opposed to any moves which would be interpreted as tending to raise trade barriers.

The A.C.M.I. has been urging that quotas be established at 150 per cent of the 1953-54 average of imports. Section 22 of the Agricultural Adjustment Act provides two alternative remedies: the assessment of ad valorem fees not in excess of 50 per cent, or the imposition of physical quantitative limitation.

A.C.M.I. feels the use of the ad valorem fees would be of doubtful effectiveness. The reason for this is that in terms of total imports it could insure no predictable results, and it could not be equitable as a corrective measure since its only certain effect would be to push the higher cost countries out of the U. S. market in favor of the lowest cost countries.

The A.C.M.I. emphasizes that such a result is not being sought and that the U. S. industry does not wish to disturb the historical pattern of imports which has been built up with a score of countries. In the light of all this, it feels that only the quota method of control can preserve such normal relationships.

The current situation, as presented in the petition, is this: Cotton is an agricultural commodity under not one but a number of support programs. It is price supported both by loans and government purchases; its importation is rigidly restricted by quotas; its production is under acreage and marketing quotas, and its export is aided by special programs. So, therefore, the Secretary of Agriculture now has ample justification under the Agricultural Adjustment Act to invoke its emergency provisions and set up global quantitative import quotas on cotton goods.

There seems to be a generally prevalent feeling at the present that the export quota action by Japan, coupled with temporarily improved business conditions for most of the domestic industry, conceivably could mislead certain elements of the public, government officials and members of Congress to believe that the import problem is less serious now than a while back, while, quite to the contrary, such is very much removed from the real situation.

As it stands, there is nothing whatever in the way of Japan's taking over almost any part of the U. S. textile market when and as she chooses. Such a modern, cartelized industry like Japan's can simply exploit Oriental wage advantages so as to time and target shipments that drive wedges into the U. S. textile structure and take it over, so to speak, segment by segment.

The fact is that the lowest-cost countries like Japan not only demoralize the U. S. market by infusing the whole structure of the U. S. cotton textile economy with dismay and uncertainty, but they also take away from the U. S. market the traditional share of it that other countries have built up. And that is why the textile industry and major segments of the cotton industry have felt that an equitable quota system is the only logical and sensible solution to the situation which now poses such tragic consequences unless remedial action is taken before it is too late.

The industry has contended this is the only positive course and the only practicable means whereby an expansion of imports can be contained without disruptive effects on the home market and the cotton support program. Such a quota formula is certainly in line with a policy of economic encouragement to the nation's Free World allies, and it most certainly would provide the entire cotton industry with the stability it so urgently needs for any sound future growth, in keeping with the growth of other segments of our national economy.

The Japanese Government in announcing that it intends to establish quotas on cotton goods shipments to the United States, ironically takes of its own volition a step which the U. S. State Department has claimed all along would severely hurt U. S. foreign trade policy. The Japanese move can be

ALABAMA PAID SPECIAL TRIBUTE TO KING COTTON and its contributions through production and manufacturing to the state's economy at the Birmingham Festival of Arts, which this year featured "Land of Cotton" as its theme. An art and design competition, a model "Home of Cotton" and other projects in which thousands participated were included among highlights of the celebration. Alabama's textile manufacturers contributed $4,000 for awards in the painting and design contest, and winning entries were purchased for the Birmingham Museum of Arts. In this photo Alabama's Maid of Cotton, Miss Joana Sharp, inspects one of the paintings entered in the competition. Others shown are E. S. Whitfield of Stewart, Ala., the state's champion cotton grower, and Fred F. Phillips, president of the Alabama Cotton Manufacturers Association and president of Buck Creek Cotton Mills at Siluria. The painting, entitled "Hill Patterns," is by George Cross of Chattanooga, Tenn.

viewed, no doubt, as a constructive step in the right direction, but the present chaos and uncertainty which today insidiously grips the whole cotton economy cannot be removed by imposing upon Japan the sole responsibility of determining and controlling the character and volume of its cotton goods exports to the United States.

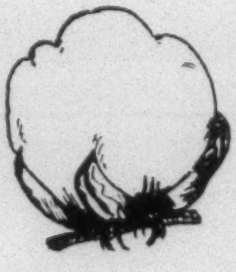
Beyond that, it is neither fair nor sound in principle and it complicates the problem for both countries and makes any ultimate solution of the problem all the more difficult. On the other hand, action by the United States itself, through invocation of such a quota system as proposed by A.C.M.I. and other segments of the industry, means that all nations will receive equitable treatment as well as the sub-divisions of the U. S. industry.

Otherwise, who can predict what Japan's shipments might be a year, or two years, from now? Or whether some other country fostering textile expansion may replace Japan as a major threat of unfair foreign competition? Such questions are certain to exist, beclouding the whole cotton textile economy with doubt and uncertainty when it needs so desperately a measure of stability so that it can plan ahead and for one thing, seek to maintain for cotton its proportionate share of the total domestic fiber market that should belong to cotton if its consumption can keep up with the growing population.

Industry feeling seems to be that since the crisis faced by the entire cotton economy has been brought about by governmental policies, it is therefore the government's responsibility to try to correct it. And it is felt import quotas are now imperative in view of the large-scale imports of finished Japanese cotton apparel and cotton products currently being contracted for by American buyers.

Expanded Japanese cotton textile production in the past five years has cost the United States a third of its export markets, amounting since 1951 to 250,000,000 yards, and imports of Japanese textiles last year displaced an additional 250,000,000 yards of American production.

In numerous meetings with foreign textile leaders, such as the International Cotton Textile Conference held in England in 1952, spokesmen for A.C.M.I. and the U. S. mills laid out suggestions for improving textile commerce, expansion of use of textile products and greater consumption throughout the world of raw cotton. Some of these ideas are being developed, in Europe particularly, at the present time.



During such a time the government trade experts in Washington never showed the slightest indication of catching the industry's broad vision of promise for a dynamic, positive trade policy—one that would lead other countries to set their economic houses in order, live up to the true give-and-take spirit of reciprocity and set international trade free from its snarl of hidden tariffs, subsidies, exchange manipulations and similar bureaucratic controls.

Instead, the advisors to the new Administration came up with a warmed-over version of the basic policy instituted by the Roosevelt-Hull regime during the depression era. As expressed in White House proposals for extension of the Reciprocal Trade Agreements Act, it simply earmarked the textile industry, among others, for sacrifice on the altar of free trade.

The loss of foreign markets in recent years has built up a record surplus of cotton in the United States. The government itself has more than two billion dollars invested in cotton under farm price support operations. And U. S. cotton exports dropped a drastic 55 per cent in the first four months of the current marketing season.

Meanwhile, the "wedge pattern of penetration" by the Japanese has hit hard at certain types of U. S. production in late months. Imports of sheets and pillowcases totaled 9,482,000 during the first ten months of 1955 compared with 1,322,000 in all of 1954; imports of woven cotton clothing totaled $19,900,000 in value for the first ten months of the year as against $877,000 throughout all of 1954.

Cotton thus faces competition on all sides. High rigid U. S. price supports have been a factor in enormously expanded raw cotton production in foreign countries and are encouraging the use of substitutes for cotton in this country. Since 1950, cotton's relative share of the U. S. civilian per capita consumption has dropped 74.4 per cent while synthetics have climbed from 25.6 per cent to 31.2 per cent. And synthetic fiber production outside the United States in the last five years has doubled, reaching an equivalent of eight million bales of cotton.

A few years ago the United States was exporting 1.5 billion yards of cotton goods. This was the equivalent of 1.5 million bales of cotton in the form of goods. It was all American-grown cotton. Today Japan is the world's leading textile exporter, and U. S. volume has declined to about one-half billion yards—the equivalent of one-half million bales. So, on every front, the U. S. cotton economy shrinks as production and manufacturing increases overseas.

One thing recognized is that cotton growers can't have prosperity working a base of 17 million acres or even less for any extended period of time. And they can't achieve maximum efficiency of production if geared only to domestic requirement. Now there's the new crisis brought on by unrestricted imports of cotton goods from Japan moving into the U. S. market by great strides.

The estimated 200 million yards total of Japanese textiles which entered the United States during 1955 made a profound impact throughout the industry. In piece goods, this was triple the 1954 inflow, four times the imports from Japan in 1953 and a 20-fold increase over 1952. And in the same time that this upswing in textile imports from Japan was taking place last year, overseas sales of U. S.-made goods continued to decline and raw cotton exports dropped off 50 per cent.

All branches of the cotton industry are becoming poignantly aware of the seriousness of the situation, a situation which directly affects some 15 million people.

Do Retailers Know Your Product?

By ROBERT ROWE, Amos Parrish & Co. Inc., New York City

Greater efforts by the industry to insure that retail salespeople have full information on new fibers, fabrics and processes were urged by Mr. Rowe in this address to a recent meeting of the National Federation of Textiles Inc.

MY job in the textile field begins where yours ends. Once you've developed your products, it becomes the job of advertising to tell the public about the whys, hows, whens, whats and whos. I could discuss many phases of that particular endeavor. I could discuss layout, promotion, copy. I could discuss various media. I could deliver a dissertation on why television is so far superior to magazines, or one on why newspapers are better than radio. But rather than discuss any of these topics, I'd like to talk about a very serious problem which exists today in the textile industry.

Let us say a manufacturer develops a new product. He puts as much money as he can afford into advertising to let the public know about it. He makes up hangtags which explain the product, pins them on his garment, and sits back to watch the sales roll in. He has completed his job, or so he thinks.

Actually, he has missed the most vital link in the entire chain of selling . . . the salesperson. He has told everyone imaginable about his product . . . the buyers, his salesmen, the general public, but he has neglected to tell the persons who actually have his product's future in their hands . . . the salespeople.

It has been my experience, as so many people I speak to in the field of textiles and retailing, that the lack of knowledge on the part of salespeople is appalling. As one retailer put it the other day at a luncheon . . . Don't tell me how many sales were made in department stores last year; tell me about how many sales were lost because the salespeople had no knowledge of the product.

To lay it on the line . . . salespeople are just not informed. And just picture this situation. When a manufacturer advertises his product to consumers and neglects to tell salespersons about it, the consumer invariably knows more about the product than the person selling it. The best example of this is a story a friend told me as I rehearsed this speech with him. He said, "You know . . . that's an interesting point. For several months now my wife and I were thinking of buying an electric blanket. We read all the ads and literature on the subject and finally, we went to a store to buy one. When the salesgirl approached us we began asking her questions to find if this electric blanket had the features we read about. It was obvious after several minutes that we knew more about the product than she did. Suffice to say, we didn't buy the blanket there. We had no confidence in the store, the girl, or the product." Typical, yet time after time, manufacturers skip salespeople with their selling message.

Not all of this situation comes from an oversight on the part of the manufacturer. Invariably, he deals with the buyer and he makes absolutely certain she knows all about his product. He leaves after closing the sale completely certain the buyer will tell the salespeople about it in the morning. The morning comes, the buyer is too deluged with other administrative duties, and the customers come in. The salespeople do the best they can. In desperation they give the customers some unconvincing double talk about the product and so more sales are lost.

And there's another extremely important reason why salespersons should be informed by the manufacturer about his product. Salespersons, at the point of sale, are his official representatives to the public. Now I ask you, would that manufacturer neglect to inform his salesmen about his product? He wouldn't sell anything if he did. Well these salespeople are his salesmen too, and to neglect informing them borders on absurdity.

There is no need for me to elaborate lengthily on the worth of good salespeople. You know as well as I good salespeople are worth their weight in gold. The best example I have of this is an experience I had in Bonwit Teller recently in Philadelphia. I particularly like the ties in that store and stop in every time I'm in town. I searched the assortment and finally spotted one I liked. While I was doing this, the salesman was standing by watching me. When I had chosen one he took it from my hand and began wrapping it. At this point, another salesman walked up to me and asked if I had decided on a purchase. I told him I had and pointed to the tie the other salesman was wrapping. "Very smart tie you chose," he commented. "You know," he continued, "our ties are all pure silk and they make the nicest knots I've ever worn." I told him I agreed with him and that I had been buying my ties there for years. "Just a moment," he said to me with a wink. "I'm not trying to sell you any more ties, but I would like your opinion on the selection that just came in." He reached under the counter and brought out a large box with more than 100 ties in it. "Feel the quality of these silk beauties," he said. "We get these from one of the finest tie houses in New York that's known for styling and good taste. Just wondered what you thought of this assortment." I gave him my answer by purchasing five more ties.

The other salesman would have done the same thing but he didn't take the trouble to learn. *Or else someone hadn't taken the trouble to teach him.*

Another classic example of salespeople's inferior knowledge of a product was one which faced us recently. We had just begun work on a new stretch nylon stocking and wanted to know how much the salespeople knew about stretch stockings in general. I went out to the stores in order to find out just that. It seemed that all of them knew that stretch stockings stretched, but they knew very few of their other virtues. Most of them had no idea why a woman should buy stretch stockings as opposed to any other hosiery. It was apparent that something had to be done for our

product in the way of fully informing the salespeople about it.

To help solve this problem for our product, we made a film. We took it to all our key stores and showed it to the salespeople. I'd like to repeat that. *We did not leave it up to the buyers to tell the girls about it . . . we took it directly to the salespeople themselves.*

This film is one device which may be used to get the product story over to the person who is doing the selling. But we wanted to make certain that we really got our story over to the salespeople. After the film ended, we gave them all booklets explaining the entire concept of our product to them. The film and the booklet accomplished what we wanted them to: To help the salespeople understand the product so that they could explain it properly to their customers.

I'd like to leave you with this. Too many manufacturers are neglecting their first selling team when they fail to tell the salespeople what they have to sell and how to sell it. And this failure really hurts everybody involved where it hurts most . . . right in the pocketbook.

Advertising is one of the most effective instruments we know of for pre-selling products to great numbers of people. And when the key to the entire selling picture . . . the salesperson . . . is not informed, the reason for advertising in the first place has been defeated.

The Manufacturer's Responsibility In A 1956 Self-Service World

By ROBERT B. MEDVIN, Sales Promotion Manager, Riegel Textile Corp., New York City

Are you prepared to fit into the self-service element of retailing? Mr. Medvin offers some compelling reasons for being ready to deal with this new element in marketing.

MANY prospective sales are lost because of incomplete information at point of sale and lost sales are seldom replaced! With the fierce competition we have today it is difficult enough to make sales, let alone lose them because of inefficient merchandise. It behooves each manufacturer to employ stringent introspective criticism in order to make certain that he is doing everything within his powers to make purchasing of his product as simple and painless as possible.

Literally hundreds of books have been written on the many different facets of this subject. However I am concerned here only with a few of the possibilities the manufacturer has at his command to help retailers move more merchandise.

Progress has wrought many changes in the American consumer's shopping habits, just as it has with most segments of our modern way of life. The automobile has been responsible for many of these changes. Yet it has proved to be the proverbial double-edged sword. For while it has greatly enlarged the scope of our every-day shopping areas, traffic and parking problems in many sections have become so exasperating that many prospective customers prefer to drive to less congested areas—trading variety of selection for comfort and convenience.

Shopping itself has become more informal. We have come to enjoy self-selection where we browse and choose with the "assistance" of over-helpful sales personnel. We have learned to do without many extra services—even to the extent of cash and carry of large and bulky items. Thus it is apparent that we as soft goods manufacturers must take the place of vanishing retail sales personnel. When self-selection is the vogue, the responsibility of getting important selling points across to the consumer falls upon our shoulders.

There are certain basic questions a consumer consciously or subconsciously asks herself before a sale is consumated:

What is this product?
Do I know it?
How much does it cost?
What is the color?
What is the fabric content?
Is it washable, will it run or shrink?
What will it do for me—what are the advantages?

Every customer wants to know at least this much about an item before she buys. Today the manufacturer must be able to answer every pertinent question (for often there is no one else to do so). But how can a manufacturer answer a consumer's questions at the retail level? One method of accomplishing this is by intelligent design of packaging and displays. Today's consumers look for and expect packaging in the merchandise they buy. To them it is a prime source of product identification and information. In addition it is a convenience and an assurance of cleanliness or purity.

Your retailers also appreciate packaging in the merchandise they sell, for packaging can increase sales as well as lower operating expenses. Psychologically, multiple-unit packaging induces larger unit sales at no additional operating costs.

Not only does packaging help make self-service operation practical, it also protects the merchandise—thus reducing returns due to damage and soilage.

However, packaging soft goods imposes quite a problem if it is going to effectively accomplish the above objectives. Although the package must present a large amount of important information in a small amount of space, it must first attract attention. The package must stop the consumer, and then induce her to read it. Thus certain information must be treated in poster-like fashion. A passing glance should be all that is needed to attract attention away from all competing packages and say here is a package of sheets made by your brand. (Price may or may not be important

at first glance). Once the consumer is stopped and induced to inspect the package, price, size, color and fabric content should quickly be impressed upon her. Closer scrutiny may then reveal additional use benefits and instructions.

This is complicated by the fact that with soft goods it is almost always desirable to have a large window, or opening, where the consumer can see and inspect the merchandise within. Fortunately the back of a package has greater impact importance than one might normally expect. Surveys have shown that when the average consumer picks up a package for closer inspection she invariably turns it over to read the back after the first glance at the front.

There is another interesting point to consider in regard to the package's ability to increase sales. A dual purpose package, for instance one that has a re-use factor, can aid immeasurably in creating sales. Cheese has been packaged in drinking glasses for many years. And in the last few years, unusually designed gift bottles have so helped liquor sales sky rocket at Christmas time, that many companies are seriously considering them for all year use. Even now one wine manufacturer is promoting its product by calling attention to the fact that the *bottle* makes a fine lamp when empty.

Packaged soft goods cannot do well sales-wise unless they are properly displayed. People normally buy what they see—often acting on impulse. If they do not see it, they seldom ask. A good example of this is the amazing growth of vending machines in the past few years. Here is the ultimate in self-selection fulfilling the consumer's needs —and ingenious packaging and display makes this possible. It is amazing how many products are vended in this manner. And it all boils down to giving the consumer what she wants, where and when she wants it, in a convenient form, at a price she is willing to pay—and telling her so in a well-designed display.

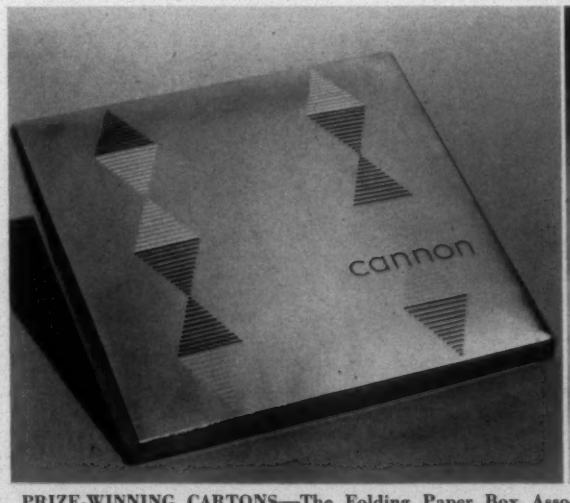
A full display of merchandise attracts sales. While it might appear to be a retailer's responsibility to see that adequate stock is always kept on view, the smart manufacturer instructs his salesmen to check displays and stock on every call. And a smart salesman will suggest correcting any deficiencies noted.

An imaginatively designed merchandise display is an immense aid in the battle for increased sales. The first requisite of any unit is to bring the merchandise out on display. To do this you must first obtain the retailer's co-operation. Thus your rack must fit the limited space he can allot your product. And your unit should also blend in with the store's decor. And while the unit must attract attention, it should do so by featuring the package itself. The less display unit and more merchandise seen, the more effective the display will be. (Even newly-designed vending machines, where the machine is the display, and the product of necessity is shown by picture, are now providing display space to feature the package itself.)

If the design of the merchandise unit is adequately thought out, you can immediately see which merchandise is short and should be replaced. This can be accomplished by breaking merchandise display into simple classifications. Whether the classification be price lines, styles, color, size or by usage, a shortage in any classification becomes immediately apparent. If space is provided for adequate reserve stock this situation can be immediately corrected.

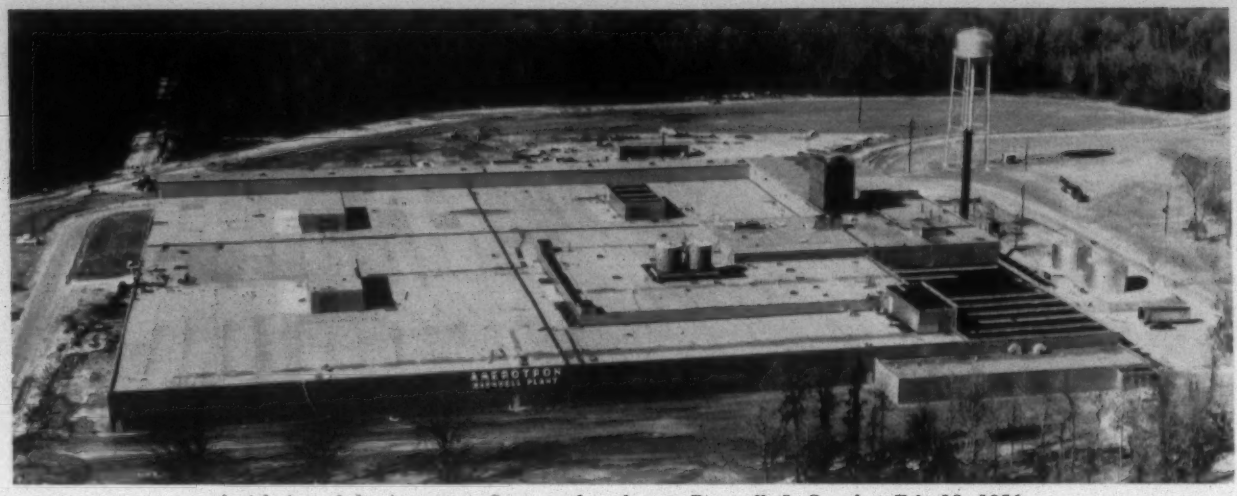
Anyone will agree that packaging and point of sale display are complex problems. They need the guidance of professional advice. Even if you don't have professionals permanently on your staff, and you can't afford outside consultants, good advice is still simple to obtain. Most packaging and display producers have experienced, well trained designers whose sole job is to help you produce more effective selling tools. Take advantage of this aid.

But remember, self-selection packaging is not a panacea. Selling merchandise always depends on satisfying a consumer's wants. Meet her needs and a sale is consumated—if you don't, nothing will make the sale for you. Self-selection merely aids you in bringing your merchandise before her eyes.



PRIZE-WINNING CARTONS—The Folding Paper Box Association has announced that two textile cartons have received awards in the 1956 annual carton contest sponsored by the association. Receiving two first place awards was the carton *(above right)* made by Old Dominion Box Co. of Charlotte, N. C., for M. Lowenstein & Sons. The carton, designed to package Lowenstein's Ever-Pleat and Quint-Pleat skirts, took first honors in two categories of the contest—potential new volume use and textiles and wearing apparel. The transparent film window of the carton offers full view of the product while sturdy construction protects the goods from damage and soiling. In packing, the Lowenstein material is rolled, eliminating danger of wrinkling.

An honorable mention award was presented for the carton *(left above)* made by Robert Gair Co. Inc., New York City, for Cannon Mills Co. The carton, designed to package a Cannon towel gift set, received a merit award in the one and two-color letterpress category of the contest. The special frame-style bottom of the two-piece carton offers maximum display value. Covers are of full tuck simplex construction, sturdy enough to insure stackability on retail shelves.



Aerial view of the Amerotron Corp. woolen plant at Barnwell, S. C., taken Feb. 12, 1956.

TAKE A LOOK AT:

Amerotron's New Woolen Plant At Barnwell

THE official dedication exercises marking the opening of the new Barnwell, S. C., woolen plant of Amerotron Corp. took place Feb. 24. Believed to be the first completely modern and custom-designed mill built specifically for the woolen industry within the last 30 years, the Barnwell plant is gradually getting production under way. The plant has a total of 400,000 square feet of manufacturing space plus additional space for loading and shipping docks, mezzanines, etc., which bring the over-all total to 528,000 square feet. Built at a cost of $10 million, including machinery and equipment to be installed, the plant is expected to produce an annual volume of approximately $25 million.

Construction on the plant was started early last Summer and the responsibility for the selection of new equipment and arrangement of the mill was placed with Barnes Textile Associates of Boston, Mass., under the personal direction of N. M. Mitchell. Lockwood Greene Engineers Inc. designed the plant and Daniel Construction Co. was the general contractor.

The mill will be equipped with 156 W-3 Crompton & Knowles looms and 24 Warner & Swasey weaving machines. There will be 66 Whitin spinning frames and 24 Whitin cards. The blending units have been built by Proctor & Schwartz and incorporate electronic devices and continuous basis features, conceived and engineered in the very latest design to achieve the utmost in efficiency. The mill will also contain a full complement of all dyeing and finishing equipment supplied mainly by James Hunter Machine Co. and Riggs & Lombard.

This equipment will give the plant great flexibility and will enable Amerotron to make a wide variety of fabrics for the men's and women's trades in both staples and fancy concepts. Early production runs will be on lower-priced fabrics. Production is expected to break down ultimately into about 60 per cent for women's and children's wear and 40 per cent for men's wear.

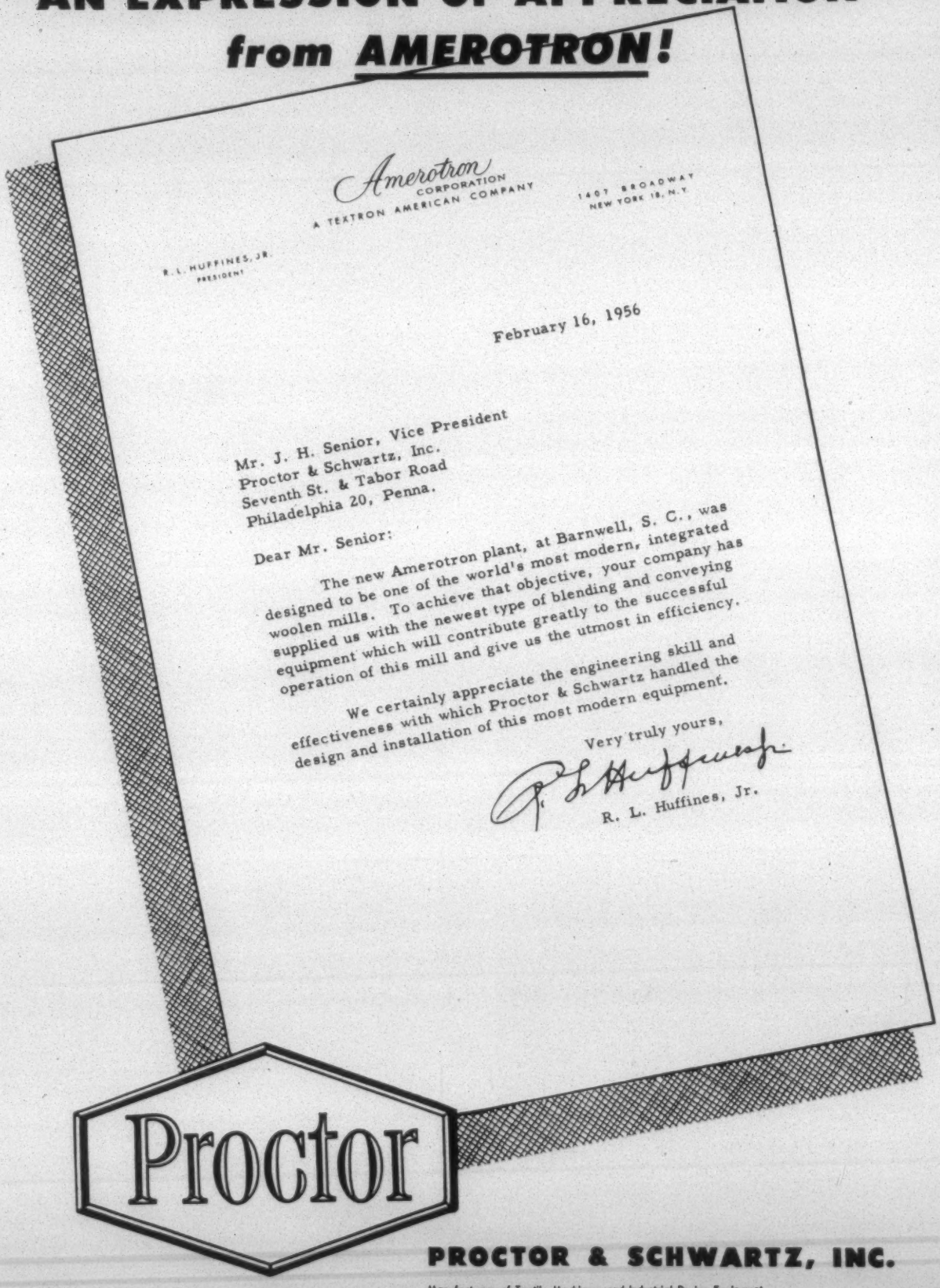
The bulk of the equipment in the plant is new, although some of the looms and some dyehouse equipment has been transferred from other Amerotron plants. In choosing blending equipment for the plant, Mr. Mitchell of Barnes Textile Associates conferred with John H. Senior of Proctor & Schwartz, who recommended two systems—one for handling large blends on a continuous basis and a smaller system for handling small lots and sample lots. The system for larger lots operates as follows:

The various types of wool stock to be blended are laid out in front of eight openings in the second floor. The wool is pulled apart and dropped into the chutes which lead to the eight No. 655 blending feeds located directly underneath on the first floor. These eight feeds are pre-set so that each will deliver an exact percentage of the total blend at all times.

The feeds drop the stock to skewing aprons, equipped with push boards and a Proctor Monitor. The skewing operation distributes the stock across the width of the apron before dropping the stock to a long floor apron, which is approximately 65 feet long. The stock is built up in layers on the long floor apron and is then conveyed by a six-foot inclined apron to a Proctor No. 512 super picker. The Monitors, mentioned above, are attached to each feed. Should any feed fail to make its predetermined weight, the Monitor lights up and the whole system shuts down until the defect is corrected.

When the layers of stock are going through the feed rolls of the picker, the teeth of the cylinder bite down through the several layers so that the stock is opened and blended together. From the picker the stock is pneumatically conveyed to a Proctor ceiling condenser. This condenser drops the stock on a feeding apron equipped with a spreader. The feed apron carries the stock to a patented Proctor roller distributor mounted over a large reblending box. The stock travels over the rolls of the roller distributor and when it reaches the last roll it interrupts the beam of an electric eye, causing every other roll to reverse momentarily. The reversing action of the rolls drops the stock between every other roll into the box below. This action

AN EXPRESSION OF APPRECIATION
from AMEROTRON!



Amerotron
CORPORATION
A TEXTRON AMERICAN COMPANY

1407 BROADWAY
NEW YORK 18, N.Y.

R. L. HUFFINES, JR.
PRESIDENT

February 16, 1956

Mr. J. H. Senior, Vice President
Proctor & Schwartz, Inc.
Seventh St. & Tabor Road
Philadelphia 20, Penna.

Dear Mr. Senior:

The new Amerotron plant, at Barnwell, S. C., was designed to be one of the world's most modern, integrated woolen mills. To achieve that objective, your company has supplied us with the newest type of blending and conveying equipment which will contribute greatly to the successful operation of this mill and give us the utmost in efficiency.

We certainly appreciate the engineering skill and effectiveness with which Proctor & Schwartz handled the design and installation of this most modern equipment.

Very truly yours,

R. L. Huffines, Jr.

Proctor

PROCTOR & SCHWARTZ, INC.

Manufacturers of Textile Machinery and Industrial Drying Equipment
Philadelphia 20, Pa.

continues, dropping the stock into the reblending box and building up layer upon layer of the stock being blended.

After the box is filled, the blend moves out slowly. It is then broken down from top to bottom by means of a seven-foot break-down section. This has retractable pin beaters and a leveling and beater roll. It is then spilled on a cross conveyor where the emulsion is applied and then goes through a final picking in a Proctor No. 512 super blending picker which mixes the emulsion with the blended stock. The blended stock then goes through a pipeline to a Proctor ceiling condenser located in a penthouse over a baling press on the second floor.

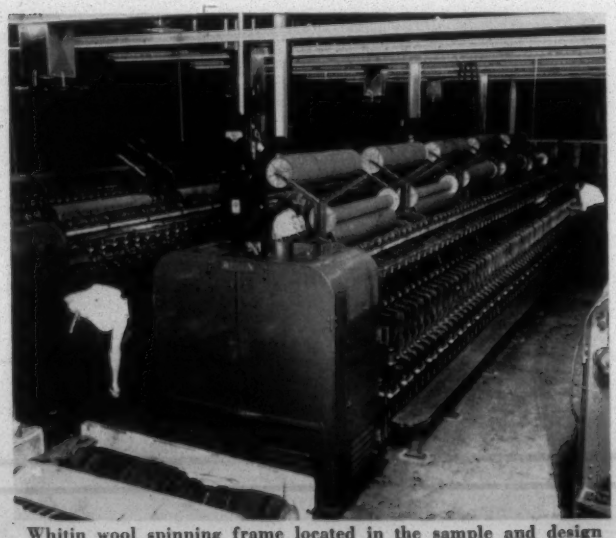
Sample Lots

The blending system for sample lots and small lots (250 to 1,250 pounds) is located on the second floor and uses a system slightly different from that used in the system described above. The entire lot to be blended is gathered together at the feeder. The stocks are pulled apart and deposited in the hopper of a Proctor No. 656 picker feed which feeds a Proctor No. 512 mixing picker. From the picker the stock is pneumatically-conveyed to a Proctor ceiling condenser which drops it on a feed apron with a spreader. This apron feeds a roller distributor which drops the stock into a reblending box. Following this is a five-foot door opening and a storage bin.

The stock travels over the rolls of the Proctor patented roller distributor and when it reaches the last roll it interrupts the beam of an electric eye. This causes every other roll to reverse momentarily. The reversing action of the rolls drops the stock between every other roll into the box below. This action continues, dropping the stock into the reblending box and building up layer upon layer of the stock being blended. When the whole lot has been run into this first section, the floor apron is started, the door opens and stock passes into the storage section. The door is then closed and from this section the stock passes through the seven-foot break-down section, where it is broken down from top to bottom by the retractable pin beaters and deposited on a reversible picker apron.

The reversible picker apron, on the first run, carries the stock to a pick-up pipe which returns the stock for a second run over the roller distributor. This lays it again in layers and when the whole lot is in, the stock is moved to the storage section. After this second run, the door in the center of the reblending box is closed and after cleaning out, the system is ready to start blending a different lot of wool. The blended lot, after passing through the break-down section, is deposited on the reversible picker apron which this time takes it to the No. 512 picker where emulsion is applied. The blended stock is then conveyed to a baling press and is baled for storage.

From the time that the stocks are placed in the feeds of the blending systems, all action is automatic and no labor is required to handle the stock until it is removed from the baling press.



Whitin wool spinning frame located in the sample and design area.

Riggs & Lombard stock dye kettles being installed at Barnwell.

Another improved system being installed at Barnwell is the Proctor automatic system for feeding stock to the dye kettles. This system utilizes a bale breaker feed located on the second floor into which bales of stock to be dyed are placed. These can be either raw stock or stock which has been previously blended in either of the Proctor blending systems. This new automatic feeding operation uses a series of reversing conveyor belts by means of which the stock to be dyed may be dropped through any one of six openings in the floor. Each of these floor openings has connected to it a 20-foot long spira-tube from which the stock may be deposited into either one of two dye kettles serviced by this one outlet. At each downspout station there is located a control switch which is part of the Proctor patented control system.

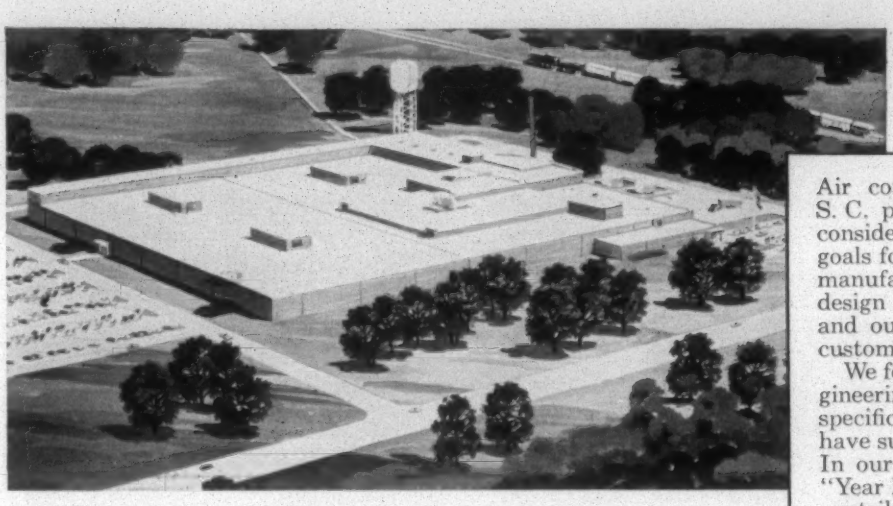
When the control button is depressed (one located between each two dye kettles) the pre-scheduled baled stock is opened by the bale breaker and scattered on the conveyors which automatically operate in the proper direction to deliver stock to the proper downspout. The spira-tube at this station may then be guided over the desired dye kettle and moved around so that the stock may be spread evenly around the dye kettle. When the kettle is filled, the control button is re-set and the system is ready to distribute the next lot of stock to another dye kettle.

Whitin Equipment

Whitin Machine Works has reported that the order for wool carding and spinning machinery now being manufactured for the plant is the largest single wool machinery order ever placed by an American mill. Included in the

Amerotron Corp. cites Bahnson research in air conditioning new plant

Bahnson Central Station "Year-Round" System fits exacting standards of modern Barnwell, S. C. woolen Mill



Amerotron Corporation's modern, integrated carded woolen mill recently completed at Barnwell, S. C.

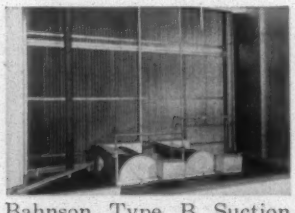
Engineers and Architects: Lockwood Greene, New York, N. Y.
General Contractors: Daniel Construction Co., Greenville, S. C.

Air conditioning our new Barnwell, S. C. plant involved several principal considerations: our planned operating goals for this mill; Amerotron's special manufacturing processes; the modern design and construction of the plant; and our obligations to personnel and customers alike.

We feel that Bahnson's advanced engineering research and attention to our specific air conditioning requirements have successfully met those conditions. In our new plant, Bahnson's modern "Year Round" Central Station System contributes effectively to our aims for high quality production and operating efficiency.

Amerotron Corporation

Modern Bahnson duct system, ceiling suspended, delivers saturated air under automatic control in proper proportion to the need. Custom designed, ductwork is quality built and securely connected for efficient air-handling. Bahnson type ESC Atomizers, mounted over discharge grilles, offer flexible supplementary humidification.



Bahnson Type B Suction Strainers in tank of Bahnson Type Y Air Washer automatically remove lint from re-circulated water and flush it away. Thus clogging of spray nozzles is prevented, and washer is kept operating at peak effectiveness. The Type Y Air Washer provides high saturation efficiency, requires minimum maintenance.

The self-cleaning pneumatic Type ESC Atomizer is a pioneering Bahnson design. For supplementary evaporation with the Central Station System, it provides fine spray quality with low compressed air consumption at economical operating cost. Electric or pneumatic modulating controls available for flexible regulation.

Special Bahnson adjustable grilles offer accurate directional control of air flow with four-way deflection. A removable core facilitates cleaning and allows access to duct interior. For even balancing and distribution, the wide, individually adjustable blades effectively direct air so that temperature and relative humidity are kept uniform throughout the conditioned area.

Bahnson engineering and research staffs offer you the experience and leadership of 40 years in air handling equipment design and manufacture. Your specific air conditioning needs receive top attention in the development of the finest system for application to your individual requirements.

91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C.

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Ask for Bulletin 22A.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

order are 24 Whitin bale feeders, a new type machine used for the first time. The bale feeders are to be mounted on a mezzanine above the card feeds. Blended stock is baled after picking and conveyed to the feeders by overhead conveyance, eliminating transmission of stock by air through ducts.

The 24 card sets are three-cylinder, 72 inches, equipped with Model E automatic card feeds, J-1 conveyors, G-1 feed tables and K4DB double rub tape condensers producing 144 ends. The cards also have exhaust covers on the fancy roll and side plates. The 66 Whitin Model E spinning frames have 164 spindles, 6½-inch gauge, five-inch rings and anti-friction spindles. Tapered paper tubes, 13¼-inches long will be used for building bobbins with 12-inch traverse, holding up to 20 ounces of yarn.

Additional equipment on the order includes Whitin Model K-2 dresser reels having an over-all cylinder length of 112 inches. The reels have pneumatic compressors, expansion-type neck reeds, electrical stop motions and four-speed motor drives. Whitin-Schweiter automatic filling bobbin winders equipped with automatic bobbin loaders will be used also. The plant will produce 1½ to five-run yarn for suitings and high styled outerwear.

Most of the equipment in the dyeing and finishing department is from James Hunter Machine Co., North Adams, Mass., and Riggs & Lombard Inc., Lowell, Mass. New Hunter machinery consists of a Cascade Model C continuous cloth washer, an acid soaking tank, a nine-section single-apron stock dryer and two rotary dryer feeds for stock squeeze rolls. Riggs & Lombard has installed ten Express fulling mills, dolly washer, and stock dye kettles.

Continuous drying range, furnished by Riggs & Lombard.

Other equipment includes three 100-spindle Model 102 winders by Foster Machine Co., Westfield, Mass.; two spoolers by Davis & Furber Machine Co., North Andover, Mass.; two 45-spindle quillers by Abbott Machine Co., Wilton, N. H.; 22 Uxbridge perchers by Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.; a burling range by Parks & Woolson Machine Co., Springfield, Vt.; and dry finishing equipment by David Gessner Co., Worcester, Mass.

Opening, Picking, Carding & Spinning

Annual Progress Report

Cotton Technologists, Mill Men Cross-Breed Ideas At Council's Research Clinic

By JACK KISSIAH, Associate Editor

THE National Cotton Council sponsored its seventh annual Cotton Research Clinic Feb. 15-17 at the Carolina Hotel, Pinehurst, N. C. The clinic, divided into five technical sessions, was attended by more than 200 persons. M. Earl Heard, vice-president in charge of research for West Point Mfg. Co., Shawmut, Ala., was general chairman for the three-day meet.

First Technical Session

The first technical session got under way Wednesday, Feb. 15, with David E. Howe, American Thread Co., presiding. Leading off the session was George Pfeiffenberger of the National Cotton Council who spoke on "Improved Bale Packaging and Its Effects at the Mill." Mr. Pfeiffenberger pointed out that the National Cotton Council in 1952 set up a special industrywide packaging subcommittee to thoroughly investigate the possibilities of developing an improved bale package. The primary objective is to secure a package which gives maximum protection with reasonable costs. Three specifications are prescribed: (1) complete coverage of the bale; (2) accessibility for sampling; and (3) application to existing machinery.

Improved bale packaging, Mr. Pfeiffenberger noted, would benefit the entire industry by reducing such items as contamination, country damage, misshaped and burst bales, fire, injuries from bands and other hazards which accompany the bale in its journey from the field to the mill. Mills could possibly eliminate the extra cost now incurred in the precleaning of bales by blowing off or currying them preparatory to opening. It would decrease the time and waste involved in picking bagging after removal from the bale. It could eliminate the danger of getting hard fibers mixed with the cotton, reduce the amount of dust

which accumulates on cotton between ginning and spinning and contribute to cleaner opening rooms. A lighter weight cover would also reduce freight charges.

Since the study was launched, some 20 firms in the packaging and allied fields have supplied the subcommittee with a variety of suggested covers, bands and buckles—all of which have been extensively tested. The majority of the work has centered on the covers, but consideration has been properly given problems derived from broken and uncoated bands and buckles. In experimenting with new covers, it was found that covers of lighter weight and lower strength had definite possibilities, provided the strength decrease was compensated for by an increase in stretch. This finding brought under study such diverse materials as polyethylene and vinyl films, creped paper, burlaps laminated to paper and to polyethylene, non-woven fabrics, fiberboard boxes, palma cloth, twisted paper seat cover fabrics, woven Saran screening and even zipper-closed duck bags and wire-bound boxes. Preliminary tests narrowed the list to films, paper, burlap-laminates and non-woven fabrics for large scale tests throughout the Cotton Belt. Contrary to belief in some quarters, Mr. Pfeiffenberger pointed out, the study is not a campaign to eliminate jute. No fibers are barred provided they can do a satisfactory job at a reasonable cost.

Through the co-operation of ginners and mills from North Carolina to California, tests were made on the varied covers. Some performed satisfactorily in one part of the Belt and at the same time created additional problems in other parts. Reporting a number of these, Mr. Pfeiffenberger pointed out that, partly because of the general familiarity with burlap covers, and partly because of its greater tear resistance, burlap-laminates appeared to meet with the most popular approval. It was found that 12-ounce burlap was about the irreducible minimum to withstand compression. Some breaks were obtained in burlap at this weight, but in those cases the polyethylene film underneath did not break, but stretched, and the cotton was still protected. Hand hooks will tear burlap as they will tear other things, but in general the burlap-laminates withstood rough handling somewhat better than most of the other materials.

One of the greatest drawbacks in developing improved covers is that of sampling. Even the advantages of a perfect cover would be minimized due to the repeated sampling which occurs with no effort to close up the sample hole. Various types of pressure-sensitive industrial tapes were used in experiments to seal these sample holes. Tapes held fairly well on film and on non-woven fabrics, but not too well on paper or burlap.

All of the covers used thus far in the program have good features and poor features, Mr. Pfeiffenberger emphasized. The good features need to be combined into one cover, either through a new material, or through laminations or combinations of one kind or another. Of considerable importance in maintaining interest and continuing the program is some positive declaration from the various segments of the industry to the effect that if a new cover is perfected, the industry will adopt it.

J. Murphy Cook, who is in charge of the Clemson, S. C., cotton laboratory, Cotton Division Agricultural Marketing Service, U. S. Department of Agriculture, followed next with a paper on the "Comparative Quality Characteristics of Selected Growths of Cotton in the 1955 Crop." Mr. Cook pointed out that fiber and spinning test data on commercially grown varieties that were bred to produce staple lengths of 1-1/32 to 1-3/32-inches were included in the study on which his paper was based. Results from early, mid and late season harvestings were represented and each was averaged according to the state in which the cotton was grown. The 12 states are North Carolina, South Carolina, Georgia, Alabama, Tennessee, Mississippi, Missouri, Arkansas, Louisiana, Texas, Arizona and California.

Cook, Fiori, Howe, Pfeiffenberger, Hertel

Speakers at the opening session of this year's Cotton Research Clinic were George Pfeiffenberger, National Cotton Council; J. Murphy Cook, Clemson Laboratory, U.S.D.A.; Kenneth L. Hertel, University of Tennessee; and Louis A. Fiori, Southern Regional Research Laboratory. Chairman for the session was David A. Howe, American Thread Co.

The yarn strength data indicated that the quality of the cotton fell off in all states except Arizona as the season progressed. The early season samples gave stronger yarns, on the average, than the midseason, and the midseason gave stronger yarns than the late season. This order was reversed for the Arizona samples.

The average yarn appearance grades for the early and midseason samples did not reflect a consistent difference in favor of either period of harvesting. The samples from the late picking in 11 out of the 12 states were manufactured into yarns giving the poorest appearance. In some cases the grades were only slightly lower than the early or midseason, but in most comparisons the differences were significant.

The average classer's lengths for the samples of each harvesting period of all states indicated that there were no consistent differences between the lengths of the early and midseason samples. Some comparisons showed slightly longer staple for the early cottons. However, there were six states that showed the first and second pickings as the same length. The late season samples in six out of the 12 states were called slightly shorter, on the average, than either the early or midseason, which indicates that the classer may have detected a difference in quality, Mr. Cook pointed out.

Fibrograph results did not reflect enough difference between the three harvestings to account for the differences in yarn strengths. The late samples from 11 out of the 12 states were slightly finer fibered than either the early or late cottons. Seven of the early season periods showed slightly coarser fiber than either the midseason or late. The fiber from the early samples in eight of the 12 states was slightly more mature than the midseason or late. These differences varied from one to three per cent, and normally would not be considered significant. There was no consistent difference between the other harvestings.

Fiber strength results using O-gauge between clamps did not show enough differences between the early and late samples in but three states to lead one to expect lower strengths from the late cottons. These were North Carolina, South Carolina and California, although there were averages

from five states that showed the same trend from early through midseason to late.

The data obtained from Pressley strength tests using a 1/8-inch spacing between the clamps did not show enough difference between the early and late season cottons to account for the difference in yarn strengths in but two states. Generally speaking, Mr. Cook pointed out, most of the differences were too small for one to consider highly significant for a particular state when selecting cottons for a mix.

The third paper of the first technical session was delivered by Dr. Kenneth L. Hertel of the Agricultural Experiment Station, the University of Tennessee, Knoxville. His paper, "Cotton Fiber Bundle Elongation and Tenacity as Related to Some Fiber and Yarn Properties," was a report of work done under contract with the U. S. Department of Agriculture and authorized by the Research Marketing Act. The study investigated the relation between bundle elongation, as measured by the Stelometer, and processing behavior, and between bundle elongation and properties of yarns. The purpose of the study was to develop a method of converting elongation and tenacity values for cottons as read from the Stelometer into conventional units for these properties and determine the relationship between bundle elongation and processing behaviors and yarn properties of these cottons.

Some 680 cottons from three crop years were tested on the Stelometer for load and elongation of fiber bundles at break. The results were compared with yarn appearance, per cent picker and card waste, nep count, skein strength and X-ray angle as measured on all these cottons by other studies. Yarn elongation measurements were available for about 60 of them. An extensive analysis was made of the correlations among five of the variables for all the cottons.

The only yarn property found to be definitely correlated with fiber bundle elongation was yarn elongation. Fiber bundle elongation was also correlated with X-ray angle and less strongly with tenacity measured at zero gauge length. Skein strength was highly correlated with tenacity measured at 1/8-inch gauge length. Stelometer values of tenacity and elongation were very highly correlated with Instron values on the same cottons. The best procedure at present for getting per cent elongation with the Stelometer is to multiply elongation scale reading at 1/8 gauge length break by 0.80, Dr. Hertel reported.

Winding up the first technical session, Louis A. Fiori, Southern Regional Research Laboratory, New Orleans, La., reported on the "Effect of Fiber Bundle Break Elongation and Other Fiber Properties on Single Yarn Properties." Working with Mr. Fiori on the project were Jack E. Sands, H. W. Little and James N. Grant, all of S.R.R.L.

Mr. Fiori reported that 43 cottons, varying extensively in fiber properties, were used to evaluate the relation of fiber bundle break elongation, as determined by the Stelometer, to yarn break elongation. These cottons were processed into a series of coarse and medium yarns of varying twists. Fiber break elongation, along with five other fiber properties (length, fineness, strength, length variability and maturity), were correlated with yarn break elongation at twists for maximum skein strength, maximum single-strand strength and at two constant twists (4.00 T. M. and 5.00 T. M.).

It was found that yarns produced from these cottons varied considerably in elongation at break and strength. Yarn strength and break elongation were found to be directly related for the commercially grown short and medium staple cottons, but the long staple and the experimental, strong-fibered cottons were found to be anomalous in that they produced yarns whose strength was disproportionate to their fiber break elongation. Fiber break elongation ranked first and strength ranked second in importance as contributors to yarn elongation for a 30/1 yarn at twists for maximum strength based on multiple correlation analyses.

The modulus (secant) of cotton fibers and yarns were found to be highly correlated when the cottons were spun with twists which yielded maximum strength. The study also demonstrated that spinning conditions, particularly spinning tension, appreciably affect yarn elongation.

Second Technical Session

The second technical session of the clinic got under way at 2 p.m., Wednesday, Feb. 15, presided over by James A. Chapman Jr., Inman (S. C.) Mills. "A New Cotton Lustermeter," a single answer, direct reading instrument especially adapted for measuring luster of raw cotton and greige and mercerized yarns was described by Miss Dorothy Nickerson, cotton division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C.

The instrument, Miss Nickerson reported, includes a special sample clamp which fits into a turret top holder on the instrument that may be turned through 180 degrees for measurement of the sample with threads or fibers facing first in one direction, then in the opposite direction (as a check on sample preparation). Set up, the sample is illuminated at 45 degrees and the light leaving the sample is measured at zero degrees (Diffuse) and 45 degrees (Specular). By means of a special circuit the ratio is read directly from an automatically indicating scale. The scale reads in terms of per cent luster, 100 per cent for high luster, zero for low luster, according to the formula 100(1-D/S) in which D is the diffuse reflectance and S the specular reflectance. Samples are easily and quickly prepared from yarn skeins on special holders, Miss Nickerson reported, and a similar though narrower holder is used for measuring combed fibers from pinches of blended raw stock samples. The instrument is an adaptation of a simplified all-purpose gloss meter under development by R. S. Hunter, the speaker noted.

Measurements were made on all raw stock and greige yarn samples of the 1955 Standardized Variety cottons, and on all mercerized yarns in finishing tests made on the series. To show the general use of the instrument and the level of results obtained, preliminary data was given that average as follows for several varieties for which data has not been completed:

Variety	No. of Samples	Raw Cotton	Per Cent Luster Greige Yarns 22s		Merc. Yarns 50s	
			Carded	Combed	50s	
Acala 1517	27	61	31	32	33	43
Delfos	27	58	31	32	33	41
Acala 4-42	21	59	31			
DPL	114	59	31			
Coker	51	58	32			
Pima	12	67			40	51

William C. Harris of the Institute of Textile Technology, Charlottesville, Va., followed next with a discussion on "Trouble Shooting in Textile Processing by Use of the

Brown, Chapman, Harris, Miss Nickerson

The second technical session, presided over by James A. Chapman Jr. of Inman (S. C.) Mills, featured papers by Miss Dorothy Nickerson, Agricultural Marketing Service, U.S.D.A.; William C. Harris, Institute of Textile Technology; and Hugh M. Brown, School of Textiles, Clemson College.

Uniformity Analyzer." Mr. Harris pointed out that there are many mechanical faults in cotton processing which may cause periodic variations in the resulting yarn, roving or sliver. Each of these defects, he said, causes a particular pattern of thick and thin places in the resulting material. An eccentric part (roll or gear) on a drawing, roving or spinning frame results in a wavy pattern of thick and thin places in the material. The pattern formed in the material by a flat spot in the top roll is dependent upon the position (front, second, third or back) on the particular frame. A flat spot in the back roll position has very little effect on the resulting material. The third roll position (four roll frame) results in a thin place directly followed by a thick spot, while a defective front roll causes periodic thick places in the material.

Defective bottom rolls on the drawing frame affect the sliver differently, depending upon the position on the frame. Defective drafting rolls used primarily as delivery rolls have a greater effect on the resulting material than defective rolls used primarily as feed rolls. Most of these mechanical faults have a particular pattern which can be distinguished by proper use of the Uniformity Analyzer, he told the clinic.

There are certain settings (pen average, pen sensitivity, chart speed and material speed) which can be used on the Brush Uniformity Analyzer to assist in the search for periodic variations. The particular setting to use when searching for periodicities, Mr. Harris noted, is generally dependent upon the distance between the expected periodic variation. For closely-spaced periods in the material (3″-10″), a fast chart speed (25 mm./sec. or 125 mm./sec.) and the pen average at position 0 to 1 is generally used. A slow chart speed (5 mm./sec.) and the pen average at position 2 or 3 will illustrate longer periodic variations. The pen sensitivity control is generally used to increase the amplitude of the variations on the chart after the pen average and chart speed have been selected.

Concluding the second textile technical session, Dean Hugh M. Brown of the School of Textiles, Clemson College, reported on a "Continuous Method of Measuring Yarn Modulus." The principle of continuous winding testing of yarn is not new, he said. Two British firms are now offering a machine for such testing, and a number of others have been developed. Some of these models have been somewhat complex mechanically, he noted, and some have had impractical features. In case the yarn is fed in and out of a constant tension loop by means of gripping rolls, the rolls become worn and polished and allow slippage of the yarn in spite of high pressure applied to the rolls. If slippage is recorded as elongation the result may be subject to large errors.

In the machine developed at Clemson, he said, it is believed that the problem of slippage is completely solved by means of snubbing drums. The device has two pairs of drums, the input and output drums. In each pair, one is mounted at a slight angle with the other so that the yarn advances across the drum faces and does not wind on itself as would be the case with a single drum. Both pairs of snubbing drums are positively driven by worm gears. The worm gear driving the input drum is driven at constant speed by a suitable motor. The output worm is driven by the belt from the cone pulley on the power input shaft and the position of this belt shifts up or down with changes in the elongation of the yarn in the loop. The high gear ratio between the worms and the drum wheels allows the cone pulleys to run at fairly high speed, making it easier to shift the belt rapidly with variation in elongation of the yarn. The high ratio also makes the load on the cone belt relatively small which minimizes slippage. Various loads can be applied to the yarn by placing the weight at different positions on the load beam.

A pen arm attached to the assembly transmitting the load to the yarn loop moves up and down with variation in elongation, thereby recording per cent elongation on the chart as the yarn moves continuously through the machine.

By employing this snubbing arrangement, he said, many turns of yarn can be used on each pair of drums so that both the input and final take-up tensions may be as small as desired and yet feed the yarn into, and take it out of the loop at exactly the speed of the respective drums with no chance of slippage. The yarn structure is not altered as would be the case if the yarn were fed with squeeze rolls.

From the reading of the elongation on the chart and the load setting on the load beam, the average modulus between two given loads can be computed from the following relation:

$$\text{Modulus}_{ab} = \frac{C\,(F_b - F_a)}{E_b - E_a}$$

where F represents the load, E the elongation and C a constant depending upon the size of the yarn and the units used. The modulus given by this method of testing yarn, it was pointed out, is somewhat lower than that obtained from usual stress strain curves.

Another application of the machine is to detect and record potential weak places in a yarn. This feature can be accomplished by placing an adjustable Micro-switch so that when the elongation exceeds any desired maximum level an electro magnet will lift the load beam before the yarn is entirely broken. By means of a delay mechanism, the load is restored to the yarn after the weak place has had sufficient time to pass through the loop. An electric counter also actuated by the closing of the Micro-switch records the number of weak places in any desired length of yarn.

Some of the advantages usually claimed for continuous yarn testing over individual break tests, Dean Brown said, are the following:

(1) Since yarn breakage in processing occurs only at the weakest places in a very long length, testing the yarn in such a manner as to measure these very weak places gives a better indication of yarn performance in the mill than conventional single-end testing on ten-inch gauge lengths, which gives an

average of many strong places and only a very few of the troublesome weak spots.

(2) In a given length of time a much larger amount of yarn can be tested, greatly increasing the chance of finding the weakest places. It is a matter of chance of single-thread tests ever finding weak breaks.

(3) Yarn can be automatically tested at higher speed than with automatic single-thread break testers.

(4) Possibly the lower modulus obtained by continuous yarn testing correlates better with ends down in processing.

Jones, Hance, Whitehurst, Swift

The third technical session, "A Symposium on High Production Drawing," was presided over by L. H. Hance, Institute of Textile Technology, and featured papers by Dr. Hance, E. Kent Swift Jr., Whitin Machine Works; Joseph R. Whitehurst, Ideal Industries; and Robert M. Jones, Saco-Lowell Shops.

Third Technical Session

The clinic's third technical session, "A Symposium on High Production Drawing," was presided over by Dr. L. H. Hance, president of the Institute of Textile Technology, Charlottesville, Va. Dr. Hance, in a paper entitled "High Production Drawing—Some Fundamental Considerations," pinpointed a variety of factors to be considered in adopting high drawing speeds on existing equipment and/or in the purchase of new equipment designed for such speeds. The purpose of his paper was to present a check-list of these factors in introduction to subsequent papers by representatives of three drawing equipment manufacturers.

The first of these representatives was E. Kent Swift Jr., director of research, Whitin Machine Works, Whitinsville, Mass., who described "High Production with the Whitin Even-Draft Draw Frame." Mr. Swift described, first, the history and groundwork that went into the development of the Model M Even-Draft draw frame; second, some of the major factors in its design and manufacture; and third, Whitin's experience to date with the frame in various mills. *(Note:* A complete description of the features of Whitin's Even-Draft draw frame was carried in the December 1955 issue of this journal.)

Reporting on his company's experience with the Model M frame, Mr. Swift pointed out that there is no change in sliver variation with the frame whether it is operated at 100 ft./min. or 300 ft./min. On a carefully designed draw frame, he said, variation is not a function of speed. Typical figures of a several week's test in a Southern mill on 1⅛-inch carded work showed slightly below 14 per cent variation on the Uster tester. Another Southern mill's average of 24 tests on 11/16-inch carded cotton was 13.5 per cent. A Southern combed yarn mill found that after two processes, 1⅛-inch combed sliver came down to about ten per cent on the Uster tester. Generally, he said, average variation on carded work is expected to be in the range of 12 to 15 per cent with the majority of work run approaching 13 per cent and on combed work to be in the range of ten to 12 per cent.

As for efficiency, one mill, running the frame three shifts a day for over three months, achieved efficiencies of 80 to 88 per cent at 300 ft./min. This particular frame, he noted, was not equipped at the time with Whitin's latest improvements on the suction clearing system. Efficiency achieved will be very much a function of the size can used, particularly in the back of the frame. Whitin, he noted, would recommend a minimum of the 14-inch can, and would prefer the larger 15 and 16-inch cans, all of which can be utilized by the new frame both in the 36-inch and 42-inch sizes. A 16 by 36-inch can can be filled with 28 to 30 pounds on carded work and 30 to 32 pounds on combed work.

Production can be varied using the vari-pitch sheave furnished as standard. This allows the frame to be set at any speed between 240 and 300 ft./min. Typical productions producing a 60 gr./yd. carded finisher drawing sliver at 300 ft./min. would give 41.2 pounds per delivery per hour at 80 per cent efficiency or 330 pounds per frame hour, Mr. Swift pointed out. 55 gr./yd. sliver again at 300 ft./min. and 80 per cent efficiency would permit a production of 37.6 pounds per delivery per hour. A very fine quality combed mill running a 50 gr./yd. finisher drawing sliver at 275 ft./min. would achieve 31.5 pounds per hour per delivery at 80 per cent. Whitin feels that these figures may be bettered, but it also believes that 80 per cent efficiency is a conservative figure based on the expectation that one operator can run four frames.

Joseph R. Whitehurst of Ideal Industries Inc., Bessemer City, N. C., reporting on "High Production with Metallic Rolls," was next to address the clinic. Mr. Whitehurst described Ideal's development of its Feathertouch drafting system, using metallic rolls with ball bearing journals for both bottom and top rolls. He described the design and development of the one-size metallic rolls, using an alloy steel that would be very hard when heat-treated, would resist static electrical currents, and would have a smooth hard finish after grinding to very close tolerances that would eliminate nicking and burring that caused lap-ups. Special flute designs were necessary, he pointed out, as were prelubricated and sealed ball bearing journals for both bottom and top rolls.

Using stationary bearing housings for regulating depth of flute mesh, he said, makes it possible to control flute meshing very accurately. It also removes all vibration from top rolls caused by revolving collars driving top rolls. This arrangement also removes pressure of the weighting system from bottom and top roll journals. This is why the phrase "Feathertouch Drafting with Floating Top Rolls" is used, and this arrangement and design of flutes is the reason fibers are not damaged with this system, he said. The floating top roll advantages are used only for the first and second lines of rolls from the delivery side of the frame, because the stock has been drafted until it is very thin just prior to entering the second line of rolls.

The third and fourth lines of rolls are used, Mr. Whitehurst pointed out, to even out thick and thin places in the

sliver entering the drafting system in the following manner. The top roll on the fourth line of rolls rides the stock, and will not damage fibers, due to the mass being thick, and the instant the mass of slivers passing through these rolls increases in thickness, the top roll raises up, decreasing the depth of flute mesh of the bottom and top rolls. In turn, this decreases the effective diameter of the rolls, and a shorter length of stock passes between these rolls, thereby increasing the draft between the third and fourth line of rolls, removing the increased thickness of the stock. By the same method, except in reverse, if a thin section of stock enters the back rolls, the top roll will move downward and increase the meshing depth and effective diameter of these rolls, causing a greater length of stock to enter the drafting zone between the third and fourth rolls. This will decrease the draft in this zone and will heavy up on the thin place by not drafting this section as much as an average thickness web. This evening effect improves long and short term variation by removing short spaces of light sliver, as well as heavy places, and works the same way on any length of varying weights because it works immediately and continuously, causing the fourth roll to become a metering roll.

Other points drawn by Mr. Whitehurst included: (1) the most effective weighting for the system is dead weighting; (2) control of varying fiber lengths is accomplished by the crimp put in the stock by the special design of the flutes and the floating top roll arrangement; (3) conventional studs, subject to heating up at high speeds, were replaced by prelubricated and sealed ball bearing studs, and every other metallic gear was replaced with phenolic, or fibre, gears; (4) ball bearings were developed for remaining shafts, journals and pulleys; knock-off motions were revamped; pulleys, shafts and drives were balanced to help eliminate vibration.

Some of the more important developments now under way, he said, include: (1) high humidity or damp coiling with either chemically-treated or just plain water, to increase the yards per can, on cards, drawing frames and roving frames with coilers using small cans to be used on spinning frames; (2) fluted calender rolls for cards and drawing to increase the crimp in sliver, using the same method of floating top roll as the drafting system; (3) additional improved evening of stock entering drawing, roving and spinning to improve long and short term variation; and (4) improved control of waste that removes useable fibers from stock.

The next paper, a report on "Saco-Lowell Versa-Matic Drawing," was presented by Robert M. Jones, vice-president in charge of research, Saco-Lowell Shops, Biddeford, Me. The Saco-Lowell Versa-Matic drawing frame was first described by Mr. Jones last Fall at Atlanta, Ga., before a meeting of the American Society of Mechanical Engineers. The following are excerpts taken from the paper presented by Mr. Jones at Pinehurst.

In building the new Versa-Matic drawing frame, the following specifications were laid down: (1) it should be made in four delivery heads only, as more deliveries decrease efficiency; (2) each head to be driven by an individual motor, with a built-in brake; (3) electric stop motions throughout, with indicator lights; (4) overarm spring weighting; (5) all rolls, top and bottom, mounted on anti-friction bearings; (6) the drafting element to be built around the proven Shaw principle with 3-over-4 or 4-over-5 rolls; (7) all gears in the drafting or calender trains to revolve on anti-friction bearings; (8) each bottom roll to be driven independently—no roll to be used as a shaft to drive another roll; (9) despite provisions for close settings, all roll or intermediate gears to be kept relatively large to prevent chatter and to provide simple and correct adjustments; (10) the turntables to be provided with flanges centering the cans from the inside, making it unnecessary to lift the cans over a flange for doffing; (11) a creel for six or eight ends up at the back or for lap back; (12) provision for substitution of the regular calender rolls and tube gears by a Positube type of tube gear with built-in calender rolls when running man-made fibers or wools or mixtures prone to static trouble; (13) provision for Twinstrand tube gears for split webs to provide individual coiling of the slivers when two slivers are placed in one can; (14) automatic clearers that positively wipe every line of every roll; (15) provision for lubrication that does not require daily oiling; if possible, once in six months or longer; (16) rigid unit construction to insure correct alignment and the minimum of maintenance; (17) smooth exterior contours to reduce waste and fly accumulation and minimize cleaning operations; and (18) anti-friction tube gears and high-speed drive for same.

Let us see how these specifications have been fulfilled.

The Chassis

First, to attain maximum rigidity, strength and freedom from breakage, steel is used for the beam and its supports. Likewise, the head and foot end supports are made of steel, thus being practically unbreakable from the impact of trucks or other accidental causes such as moving or relocation. Furthermore, the painted steel plate lends itself to smooth lint-shedding exteriors, easily cleaned and maintained.

Gearing

To make certain that the gears are kept in alignment, heavy stands of unit construction are used. For assembly and overhauling, the stands can be removed from the beam as a unit. Each bottom roll is driven independently, and at the same time all driven gears are relatively large. All the gears are easily accessible, and all idler gears are positioned in swing arms, thus facilitating adjustment, because only one pair of gears need be meshed. This is made possible by the introduction of a large-diameter jack shaft running under the beam from the head to the foot end.

Power from the electric motor is transmitted by two V-belts to the seven-inch P.D. sheaves mounted on a common shaft with a 67 T. helical gear. This 67 T. gear is meshed with a 101 T. gear on the head end front roll drive shaft mounted in ball bearings which are independent of the front roll. The front roll is driven through a nylon coupling mounted in line with this head end shaft, but cushioned from any vibrations of the gears themselves. Both the calender rolls and turntable are driven from this front head end shaft; the calender rolls by helical gears with large tension change gears (60 T.-68 T.).

The tube gears and coiler are in turn driven by a chain with different tooth sprockets for various diameters of cans and the lay of the sliver in the can. All high-speed intermediate gears are made of non-metallic material and mounted on ball bearings to reduce noise and eliminate frequent lubrication. Instead of the usual noisy and difficult-to-adjust vertical shaft drive for the coiler, we have designed a quiet, smooth worm and gear unit which is connected to the gears in the turntable base by a vertical shaft, having flexible universal joints top and bottom. In this manner the turntable base can be moved to properly fill the cans without any gear readjustment. All bearings are anti-friction, grease-lubricated and require regreasing only once or twice a year.

As mentioned before, the back lines of drafting rolls are driven through a jack shaft. Mounted on the end of the front roll drive shaft, and easily accessible, is the total draft change gear, giving a range of draft from four to 12. This change gear is connected to the jack shaft through a helical train; and on the end of the jack shaft, equally accessible, is another large gear with 94 teeth. With each head we furnish three extra gears of 91, 92 and 93 teeth, all of the same pitch diameter, which are interchangeable with the 94 T. gear. Thus, for fine changes in weight of the sliver, these gears provide about one per cent change, or for the usual slivers a change of approximately ½ a grain per yard.

In previous years, with multiple process roving, fine changes at the drawing frame were not too important; but today, with one-process roving, and that single in the spinning creel, and sometimes without any roving at all, exceptionally close tolerances must be maintained at the drawing frame.

To return to the jack shaft. This is placed under the roller beam,

and at the foot end is another pair of large helical gears connecting with the foot end gear stand. Here is the take-off for the third and back roll drive. The gears on both rolls are large, easily accessible, and the intermediates are mounted on swing arms, insuring correct meshing with the pinions.

The fourth line of rolls is driven at the head with a similar unit construction. All these slow-speed change gears are 18 P. 20° pressure angle, 7/8 face, with 7/8-diameter bores, identical with those used on all our recent drafting assemblies on roving and spinning, beginning with the Gwaltney frame. These same change gears are used on the lifting roll drive and for the drive of the automatic clearers.

All the rolls, top and bottom, are mounted on anti-friction bearings. Most of the bottom steel roll bearings and all the top roll bearings are Torrington needle, similar in construction to the millions we have had in service for several years. On all lines, next to the gear that drives the roll, the roll stand has a large ball bearing to take radial gear loads and position the rolls laterally. This is accomplished because of the jack shaft drive, and is not possible where gears are bunched together at one end, as in a single-end drive. On existing drawing frames, every mill has experienced the trouble of worn bearings next to the driven roll gears, caused by the force of the gears. In time, these worn bearings usually produce a crank action in the rolls, and become another hidden source of error in the drafting pattern. Our construction eliminates this error forever.

Weighting

We have designed our spring unit with a small plunger, or pin, in the center of each spring cartridge. By means of a special spanner wrench (special so that the operators cannot toy with them), the plunger is adjusted so that the top of the pin is flush with the top of the cartridge. This makes the spring length the same, irrespective of the diameter of the top roll, and insures correct pressures at all times. An instantaneous glance will show a protruding or depressed pin if something is wrong. Thus, the troublesome problem of "hidden" errors is overcome.

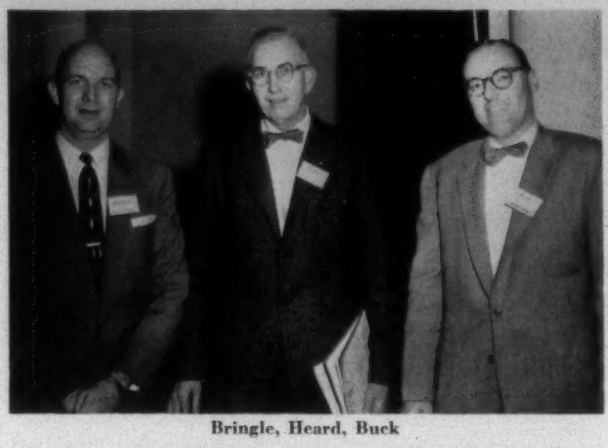
To facilitate adjustments when changing roll settings, the spring units are simply slid back and forth in their frame to match the bottom roll settings. These top spring unit settings are not critical, the foot of the plunger merely sitting on top of the roller bushing anywhere. No set screws have to be tightened up or unloosened to make the adjustments. The spring units are frictionally held in place by small flat springs when not in contact with the top rolls. When the unit is clamped in place by the eccentric toggle levers, each unit is securely anchored by the full pressure of the top roll springs.

Creel

In the majority of cases we furnish this frame with a creel for eight ends up at the back. With two-process drawing, 8 x 8, or 64 doublings, seems to provide the right number of doublings required to level out the average card sliver for quality work. The creel can be shortened for six ends up per delivery if desired. The spacing btween the arms is varied to suit the size of cans—up to 18 x 42 inches if necessary. Naturally, this increases the floor space, and eight 18"-diameter cans extend 13' back of the frame. The creel guides are angled slightly to provide more operator space. The guides are made of smoothly finished cast iron, and coated with baked enamel, without cracks or crevices, so as to provide a slippery surface for the slivers to slide over. In general, we have found metal better than plastics because it generates less static and has a higher impact strength.

Calender Rolls

The calender rolls, their bearings and method of mounting are entirely new and different. The bottom or back calender roll is mounted on ball bearings and driven at the head end through helical gears. The ball bearings for the back calender roll are securely held in the roll stands while the front calender roll bearings are free to move in or out, with true rolling, not sliding, friction. To provide the necessary pressure on the front calender, a spring-actuated bell crank lever is mounted in each roll stand. The compression springs are neatly housed in the roll stand, and exert about three times the pressure on the calender rolls because of the mechanical leverage of the bell crank lever. The ball bearings are large, grease-lubricated, for trouble-free performance.



Bringle, Heard, Buck

Overseeing the many details of this year's Cotton Research Clinic at Pinehurst, N. C., were George S. Buck Jr. and Emmett W. Bringle of the technical department of the National Cotton Council. M. Earl Heard, West Point Mfg. Co., Shawmut, Ala., was chairman of the clinic advisory committee, and presided at the opening of each of the technical sessions.

Tube Gears

The tube gears are mounted on ball bearing trunions. This keeps the ball bearings small and provides completely enclosed grease lubrication. The trunions have tires of graphite-impregnated phenolic plastics. Test gears and trunions have been running for over a year in our laboratory under excessive speeds and loads, and show only a polishing of the trunion tires, and no wear of the tube gear. Instead of the usual bevel gear drive for the tube gears, which was noisy and wore rapidly, we have designed an entirely new drive. Placed adjacent to each pair of tube gears is a small helical gear box. These gears are driven by a longitudinal shaft from the head end, with a nylon coupling between the shaft and the gear box. At the bottom of each gear box is a small steel pinion that meshes with a nylon intermediate gear positioned between each of the tube gears. The intermediate gear is also mounted on ball bearings, and is grease-lubricated. Thus, we have a completely anti-friction bearing tube gear and drive assembly, with no oil to contaminate the sliver, and not even any exposed grease, because the nylon intermediate gear eliminates any lubrication of the gear teeth.

Coiler—Base Plate

Like the rest of the frame, the housing of the base plate is formed from plate steel, making it practically indestructible. Likewise, the turntables on which rest the cans, are turned from 5/16" boiler plate. Instead of a raised rim, these turntables have a depressed flange which centers the can from inside the bottom, rather than from the outside. This has two advantages. It eliminates the raised flange on the turntable, which is frequently cracked and broken, and makes it possible for the operator to remove the full can by simply sliding it off the turntable without lifting it over a flange, and this is very important when the gross weight is 30 or 40 lbs. or more. The turntables and their intermediate gears revolve on the only plain bearings on the frame. However, these are wick-lubricated from a well, filled with oil, and should run at least a year between re-oilings. The turntables are driven by cut gears and receive their motion from the vertical shaft mounted on the head end. The turntable base may be adjusted lengthwise of the frame in order to properly fill the can without any gear readjustment. Lengthwise adjustment allows a minimum of distance from the front of the frame to the drafting rolls. This is especially desirable with large diameter cans.

Clearers

Our automatic clearers have been designed to overcome the faults of the Ermen clearer and retain its virtues. A drive has been

found that will drive the cloth apron, no matter how slack. The angle of the comb has been made adjustable, and the teeth made finer, to insure adequate cleaning and minimum wear of the nap. The old hard action drive was replaced by a new smooth one, and oil lubrication was eliminated by the use of nylon or other dry bearings. A unit of similar construction has been designed for the bottom steel rolls. Thus, every line of rolls, top and bottom, is effectively wiped by a positively driven cloth apron, and the waste carried away to a point where it is easily collected. Similar clearers have been standard on our comber for over two years, and have proven very satisfactory.

Covers

Besides the clearer covers, we have designed all the other covers with smooth, lint-shedding contours. Furthermore, many of these are lined with sound-dampening material, and are counterbalanced like your automobile trunk or engine hood; and when closed, give a dull, solid thud, like the door of a Cadillac. The covers that enclose the gears have electric interlocking switches; and unless the covers are closed, the frame cannot be started. The electric controls, including a disconnect switch, are all enclosed in a cabinet built into the front of the head end; protected, but accessible.

Stop Motions

We have incorporated electric stop motions in five positions, with four colored indicator lights. One of these is at the back where the slivers enter. Individual plastic notched guides lead the slivers into the back sliver rolls. Whenever an end breaks or runs out, a top roll drops, makes contact with the bottom roll, completing the electric low-voltage circuit. By means of a small, sensitive relay, the low-voltage circuit actuates a circuit breaker in the motor control circuit and cuts out the main driving motor. To be certain that the machine and motor do not coast to a long stop, the motor is equipped with a Stearns magnetic brake which insures quick, positive stops, with the minimum of sliver run. Stops at the back are shown by the green back indicator light.

The second point protected by stop motions is the front rolls, top and bottom. The top roll spring units have small pins or plungers that are lifted by the top roll bushings. In case of a lap-up on either top or bottom roll, this plunger protrudes beyond the top of the spring unit. On top of the front roll spring units are secured small rubber caps with brass inserts. A thin, non-conducting washer spaces the brass inserts from the spring pin. If a lap-up occurs, the small pin in the spring unit projects upward the thickness of the washer (about 1/64") and makes contact with the brass insert, which in turn is connected with stop motion and relay. This makes a very effective and foolproof stop motion, and is indicated by a yellow light.

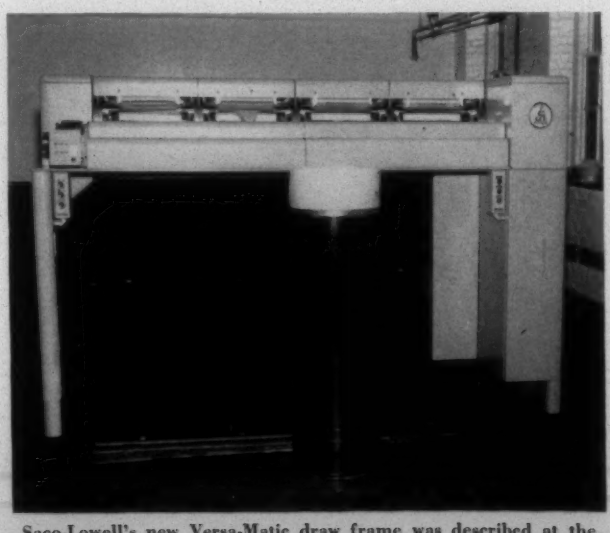
For the calender rolls, the long arm of the bell crank lever also carries a small adjustable pointed cam that actuates the stop motion switch. If a lap-up occurs, the calender roll bearing moves away, forcing the lever up and the pointed cam away from the contact roller of the Micro-switch, stopping the frame. If the sliver runs out, the calender roll and its bearings move in, and again the pointed cam slips off the control roller of the Micro-switch, stopping the frame. Because of the mechanical leverage of the bell crank and the sensitivity of the Micro-switch, only a few thousandths movement of the calender rolls is necessary to stop the frame. There are no open contacts; no points to foul or become corroded; no sliding bearings to stick or bind.

The tube gear has its own built-in stop motion. Our newest tube gear has the tube pivoted, and as soon as any appreciable sliver accumulates, the tube tips down at the top. This releases a plunger which actuates a Micro-switch, stopping the frame, and indicated by a blue light.

To be certain that each can will contain the same amount of sliver, we have directly connected to the back calender roll an electric yardage counter. The dial is set to the number of yards desired in the full can, commensurate with the diameter and height of the can and the character of the sliver. When the indicated number of yards has been run, the counter makes an electric contact, stopping the frame, and indicated by a red light. This counter is far more accurate than the old mechanical knock-off, and all cans creeled together will run out at the same time, thus saving tailings and waste. Again, this is more important with large cans, as they are so heavy they cannot be easily tipped upside down to recover tailings, and 42 inches is beyond the reach of all but ape-like arms.

Conclusion

The new drawing frame is also very adaptable for processing rayon, synthetics, wool, and other long staple fibers. The 4-over-5 construction permits running staples up to two inches long. For longer fibers the back roll is removed and the frame becomes a 3-over-4. Usually the longer fibers have coarser deniers which are easier to straighten and do not require as much break draft. Frequently they have already been straightened by gilling or pin drafting. However, the drafting operation may increase the static charges and the slivers become difficult to get through the conventional tube gear. In this case we would furnish our Positube coiler assembly instead of the conventional calender rolls and tube gear. This mechanism has small gear-driven calender rolls mounted in the revolving plate gear, and positively delivers the sliver into the can. Another variation of the tube gear is our Twinstrand assembly. Here two tube gears per delivery permit splitting of the web into two slivers, coiled separately within the same can. This eliminates any tendency for one sliver to amalgamate with another, and insures the removal of each sliver from the can without affecting the other. This Twinstrand construction is very helpful in reducing the floor space behind the roving, and we are making it standard for our can-spin installations where the yarn is spun directly from sliver.



Saco-Lowell's new Versa-Matic draw frame was described at the clinic by Robert M. Jones, vice-president in charge of research for the company.

Fourth Technical Session

A fourth technical session, held Thursday evening, Feb. 16, consisted of an address by Helmut Wakeham of the Textile Research Institute, Princeton, N. J. Dr. Wakeham, who has taken part in each of the clinic's six previous meetings, spoke on "Cotton Fiber Research with Potential Application." Reviewing the development of an increasing appreciation of fiber research by the cotton textile industry, he pointed out that the renaissance of cotton fiber research began about the time of World War II when it became apparent that viscose rayon posed a serious threat to cotton consumption. Initial attention was given to an explanation of processing behavior and yarn quality. Now however, the pattern is changing, he said. The cotton fiber scientist is now being asked not only the explanations of technological developments, but also to provide the answers to some very basic questions. These questions are about the direction of future developments in cotton production, cotton processing and cotton utilization. Thanks to the competition of synthetic fibers, the persistence of the U. S. Department of Agri-

Fourth Technical Session: Helmut R. Wakeham of the Textile Research Institute, Princeton, N. J., participating in the program for the seventh consecutive year, delivered a paper on "Cotton Fiber Research with Potential Applications."

culture in cotton research, and the promotional efforts of the National Cotton Council, research monies, both industrial and governmental, are available for cotton fiber research.

Now that these studies are under way, he said, it becomes necessary to find some way to speed up the research and to study several fiber properties in the same experiment. Fortunately, he noted, there is a way to do this. Mathematicians who have made a study of experimental design and analysis have devised methods of analyzing the results of properly designed experiment which permit the separation of the effects of two, three and even four fiber properties on fabric performance. If pronounced effects are observed, these mathematical methods will also predict that combination of fabric properties which will give superior abrasion resistance, fabric strength, softer handle, etc. An experiment incorporating these improved methods is now under way and results may be expected in the near future, he said.

Final Technical Session

The clinic was concluded on Friday morning, Feb. 17 with a fifth technical session devoted to spinning. Chairman of the closing session was P. H. Burrus Jr. of Jackson Mills, Wellford, S. C. Leading off the session was Ralph M. Rusca of the Southern Regional Research Laboratory, New Orleans, La. Mr. Rusca discussed "Some Historical and Technical Aspects of Spinning," bringing the clinic up to date on spinning methods used through the years and commenting on a number of new developments which have appeared in recent years.

He pointed out that despite the introduction of long draft systems, larger packages, higher speeds, better materials and better construction of frames, spinning is still the most expensive process in producing yarn.

A number of ingenious methods have been proposed or actually tried, he said, in attempts to overcome various limitations of spinning equipment. Among these he listed false twist devices; floating rings; balloonless spinning; improvements in tension control; compound drafting systems that spin directly from heavy roving or drawing sliver; centrifugal spinning or pot spinning; conventional drafting and new methods of twisting; spinning by means of a hollow spindle; drafting other than by rolls; etc.

The last ten years, he said, have seen several promising developments that may materially improve the efficiency of spinning. A number of radical ideas have been proposed, but apparently none is ready for commercialization. The fact that major changes are slow in taking place, he said, is really a tribute to the integrity of the machinery manufacturers who conscientiously and thoroughly evaluate new equipment under actual mill conditions to determine if the equipment is economically and technically practical for the industry.

The next paper was a report from Richard C. Moyer of The Linen Thread Co. Inc., Blue Mountain, Ala., on "Spinning Coarse Yarns From Drawing Sliver." Mr. Moyer reported that for the past few months his company has been experimenting with a full length 200-spindle Saco-Lowell Gwaltney frame equipped to produce a range of yarns up to 10s direct from drawing sliver. He pointed out that most of the study and developments of spinning direct from drawing sliver have been confined to the spinning of yarns in counts finer than 12s with very little thought given to a practical arrangement for spinning yarns in counts 10s and coarser. To spin coarse yarns economically, he said, requires that the supply cans be as large as possible to give maximum runs between creelings. The use of cans in a size 14 x 36 on larger as a supply does create a problem of developing the most practical arrangement of the creel for best operation of the frame, Mr. Moyer noted. There is also the problem of properly placing cans at the frame from the standpoint of floor space requirements.

Tests results at Linen Thread have shown satisfactory results in quality of yarns produced, he reported. The frame is a 4½-inch gauge with 3½-inch rings and 12¼-inch traverse. The supply cans can be placed at the floor on both sides of the frame with a sufficient working alley between the cans and the frame. Another arrangement has one row of cans on the floor and another row on a rack above to conserve floor space. With all cans placed on the floor, the over-all width per frame including the cans is 135½ inches, allowing 27½-inch working alleys. With cans placed one above the other, the over-all width is reduced to 110½ inches. The track for a traveling cleaner is six feet from the floor to allow proper clearance for a person of average height to walk under. Practically no trouble has been experienced, he reported, from sliver breaking back in

Rudnick, Moyer, Rusca, Burrus

Bringing down the curtain on the 1956 clinic with a session on spinning were papers by Ralph M. Rusca, Southern Regional Research Laboratory; Richard C. Moyer, Linen Thread Co.; and Edward S. Rudnick, New Bedford, Mass. Chairman for the final session was P. H. Burrus Jr., Jackson Mills, Wellford, S. C.

the creel despite this creel arrangement. To creel the frame from scratch is somewhat of a problem and is costly. In creeling, the same method is followed as that used on a slubber.

The drafting element is a three-zone element with Duo-Roth in the front zone where the major portion of the draft occurs. The draft will run approximately 1½ in the back zone and 2½ in the intermediate or middle zone. Total drafts are generally in the range of 30 to 60, he reported. Sliver weights of 50 to 55 grains per yard were used in spinning yarns ranging from 4s to 10s in the experiments, he said. Cans now being used are 14 x 36, and when 100 per cent cotton is processed, a full can will contain approximately 20 pounds; slightly less when 100 per cent waste or waste and cotton blends are processed. When spinning 8s warp yarn, a full can will last approximately 80 hours as compared to about 25 hours when using 12 x 6½ roving package in the creel. With the supply can running 80 hours or ten shifts in the creel when spinning 8s yarn, he pointed out, the creel can be staggered on a 200-spindle frame with 100 cans in the creel so that it would be necessary to creel only ten cans per shift.

In reporting the quality of the yarn produced, Mr. Moyer pointed out that, in all cases, yarns spun from sliver show an improvement in break as compared to yarn spun from identical stock on three-roll conventional spinning. The frame has been operated at spindle speeds of 4,000 to 6,000 revolutions per minute on a range of sizes from 4s to 10s in various qualities and twists. The frame was equipped with 3½-inch rings at speeds comparable with those considered standard for the yarns processed. With the elimination of the roving operation, one of the major sources of yarn defects, the use of modern drawing and good performance on the spinning, the yarn imperfections are held to a minimum, he said. The improvement in quality of yarn, plus the larger package, will show substantial reduction in winding cost. There is also a possibility of using this larger package directly on a twister creel, he said, thereby eliminating the winding entirely. Substantial savings in direct labor have resulted with the elimination of the roving operation and increased assignments in spinning. A full bobbin of yarn will average a net weight of 19½ ounces, which means each doff on a 200-spindle frame is equal to a half bale of cotton.

The last speaker at the spinning session of the clinic was Edward S. Rudnick, American and Canadian representative of the O-M Spinning Machine Co. of Osaka, Japan. Mr. Rudnick, in a paper entitled "Super High Draft Spinning: Sliver To Yarn," described his company's OM-S super high draft frame developed some seven years ago to spin cotton yarns directly from sliver. The frames are now capable of practical drafts as high as 600, Mr. Rudnick pointed out, and experimental drafts in excess of 700 have been achieved. For all practical purposes, he said, this means that all cotton yarns can be spun directly from sliver on the OM-S frame. At the present time, over 500,000 spindles of OM-S are in operation in Japan, India, Pakistan, Brazil, Egypt and the U. S. *(Note:* Operating features of the OM-S spinning frame were described in the July 1955 issue of this journal.) In regard to yarn quality, Mr. Rudnick reported that test data indicates OM-S spun yarns are either equal or superior to conventional spun yarns from the same stock. Frames operating in Japan usually yield five to ten per cent higher break factors than that of conventional frames, he noted.

A Study In Loom Fixing

By FRANK D. HERRING—Part Six

THIS series of articles is designed to help the loom fixer become a more efficient man on his job. It deals with unusual jobs which he is called upon to do and which are the most difficult for him to determine the cause and to fix. The trouble will be named and also the parts and motions that could contribute to, or cause, the trouble.

Shuttle Rising in Shuttle Box—This trouble usually occurs in the shuttle box on the battery end of the loom because this is the box the shuttle is in when the filling yarn bobbin is transferred from the battery into the shuttle. Due to this fact, this shuttle box cannot be built as substantially as the shuttle box on the shipper end. This shuttle box is shorter and does not give the shuttle as much protection and guidance as the box on the shipper end. Also, through necessity on account of the transferring of the bobbin into the shuttle, the back box plate is designed differently. The flange part of this box plate, which extends past the back binder and out over the back wall of the shuttle to secure the shuttle in place in the box, is partly cut away to allow passage of the ingoing bobbin into the shuttle and also to make room to allow the proper functioning of parts of the transfer mechanism.

The shuttle rising in the shuttle box creates numerous troubles for the loom fixer and the weaver. It causes intermittent loom stoppage by slamming off; creates unnecessary wear on the shuttle and the picker; interferes with the transfer of the bobbin into the shuttle, resulting in trapped and broken bobbins; and causes jerk-ins in the cloth which make seconds by preventing the filling thread cutter knives from cutting the strand of filling on the outgoing bobbin when transfer is made. The reason for the thread cutter knives failing to cut the filling is that when the shuttle rises out of position in the box, the cutter knives will strike the front wall of the shuttle instead of entering the slot in the shuttle provided for this purpose.

When the fixer is called to work on a loom for the shuttle rising in the box, he should check the followings things in the order named:

Shuttle	Reed
Shuttle boxing	Back binder

When the fixer is called to work on a loom for any cause, he should check the shuttle to determine if it is in good condition, all bristles or frictions in place, and the bobbin rigidly tight and in perfect alignment. He should also check the reed to make sure it is tight in position from end to end and has no forward protruding dents. He should check the shuttle to see if it is excessively worn as shown in Fig. D. If the bottom back wall of the shuttle is worn, it will cause the shuttle to rise in the shuttle box. If the shuttle is worn too badly, it should be replaced with a new one, but, if not too badly worn, the back wall can be planed down to make it usable. In either event, however, the reed should be squared with a reed square, and the back box plates lined with the reed, using a straight edge to eliminate wear on the shuttle.

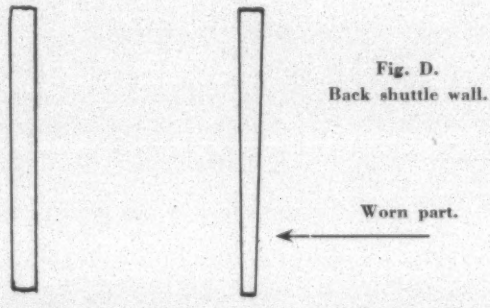


Fig. D.
Back shuttle wall.

Shuttle Boxing—The back binder, which is a part of the shuttle box assembly, is held in place by an eccentric stud. This stud is mounted on the lay end plate between the lay end plate and the outer end of the back box plate. It is secured in place by a bolt extending through the lay, lay end plate, the stud and the back box plate. The purpose of the eccentric stud is to allow backward and forward adjustment of the back binder in order to secure proper boxing of the shuttle. It is used with new shuttles and new binders as well as with shuttles and binders that have become worn.

When boxing the shuttle, the fixer should pull the shuttle up in the shuttle box to a point where the joint or knurl of the shuttle is about an inch from the picker, and check to make sure that the shuttle point is in position over the exact center of the picker stick slot in the lay. Sometimes the fixer will find that shuttle point is too far forward even after the binder stud has been adjusted to move the back binder back as far as the adjustable movement will allow. In this event, it is a sure indication that the wrong back binder is being used. This condition will also prevent the shuttle from being positioned far enough toward the back to allow sufficient coverage by the flange on the back box plate to prevent the shuttle from rising in the shuttle box.

When the right shuttle and the right binder are being used and the shuttle is properly boxed, the flange on the back box plate will extend completely over the back wall of the shuttle.

There are several different types of back binders and sometimes the supply man will issue the wrong type, especially when he has to carry different types in stock due to having different model looms. Two different type

back binders are shown in Fig. E and Fig. F. It will be noted that the Fig. E binder has a more pronounced, or fuller swell, as indicated by X, than Fig. F. These differently designed binders are made necessary by different size shuttles and the differently designed parts composing the shuttle box assembly.

Fig. E.

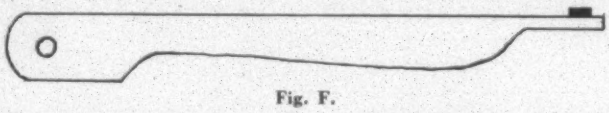


Fig. F.

There is one thing the fixer should always keep in mind when boxing the shuttle. The shuttle point near the picker should always be positioned directly in line over the center of the picker stick slot in the lay. This gives the assurance that the shuttle point or knurl will contact the exact center of the picker as it comes to rest in the shuttle box and also the picker and picker stick will follow the shuttle out of the box and deliver it on a straight line on the pick. This is essential for efficient operation of the loom.

Lay End Plates—The fixer should remove the front and back box plates and check to determine if the lay end plate is secure or not. He should put a straight edge on the plate to see if it is in line with the race plate on the lay. If the lay end plate is loose or out of line, it will cause the shuttle to rise in the box.

Checking and correcting the above-mentioned items will usually stop the shuttle from rising in the box. In some cases, however, the source of this trouble is the front box plate. The front box plate is mounted on the lay end plate and after years of operation, the filling lugs on the front box plate will wear depressions in the lay end plate. This will angle the top of the front box plate toward the front, making the shuttle box wider at the top than it is at the base of the box plate. This will cause the shuttle to rise in the box. To eliminate this trouble, the fixer should remove the front box plate and file the lugs on it to draw it back in square position. The fixer can use a reed square for checking to determine when the box plate is in correct position or filed correctly.

Unnecessary Wear on the Pickers—Correct boxing of the shuttle and proper adjustment of the power on the picker stick are two of the most important jobs of the loom fixer. When properly done, they contribute greatly to the fixer's all-around efficiency. When not looked after and done properly, they can, and frequently will, create numerous problems for both the weaver and the fixer. Examples are excessive loom stoppage, unnecessary work for the weaver and fixer, seconds in the cloth and excessive breakage and use of supplies.

The following things are the causes of excessive wear on the picker: shuttle rising in the shuttle box, improper boxing of the shuttle, excessive power on the picker stick, improperly adjusted check strap, and the picker not put on the picker stick correctly. If the shuttle rises in the shuttle box, it will cause the shuttle point to contact the picker too high and this will, in a short time, damage the picker to the extent that it will have to be replaced.

The two things which cause excessive wear on the pickers, more than all other causes, are improper boxing of the shuttle and excessive power on the picker stick on the pick. If the shuttle is boxed too loosely in the box, the shuttle points will contact the pickers with sufficient force to create excessive wear on the pickers. If the shuttle is boxed too tightly in the box, it will create excessive force of impact between the picker and the shuttle point. This will cause excessive wear on the pickers. Excessive power on the picker stick will cause the shuttle to be driven into the shuttle box with too much force. In this event, the fixer will almost invariably tighten up on the shuttle box to prevent the shuttle from rebounding or bouncing instead of regulating the power on the pick, as he should.

Excessive power on the pick not only causes unnecessary wear on the pickers but also is the source of many other troubles, such as: excessive wear on the shuttle, excessive wear on the binder leathers, excessive breakage of the warp yarn, throwing the shuttle out of the loom, and excessive wear and breakage on the lug straps and picker sticks. One of the best ways for the supervisor to check on the all-around efficiency of the loom fixer is to keep a close check on the monthly consumption of pickers.

The primary function of the check strap is to stop the picker stick from one and one-half to two inches from the end of its backward stroke and create a cushion for the shuttle before it comes to a stop in the shuttle box and prevent solid impact of the shuttle point with the picker, which would cause excessive wear on the picker and also allow the shuttle to bounce or rebound in the box. Best results are achieved by proper adjustments of the check straps and the check strap frictions. A hole is reamed in approximately the center of the picker head to receive the point of the shuttle when it comes into the shuttle box. If the picker is put on and secured on the picker stick in such a way that the shuttle point does not contact the picker in the center of the reamed hole, it will cause unnecessary wear on the picker. It will also cause many other troubles, such as throwing the shuttle out of loom, slamming off, etc.

Shuttle Failing to Box Occasionally—This is a job that the loom fixer is not called upon to do very often, but it does happen to all fixers occasionally. All loom fixers know the vital importance of shuttle boxing and the numerous troubles derived from improper boxing. The number of things which will cause improper shuttle boxing are almost too numerous to mention, but most of these causes are readily apparent to the loom fixer when he checks the loom. The one cause covered here is so remote and difficult to locate that the fixer will sometimes be called to the loom several times daily, and sometimes for several days before he calls for help or stumbles upon the cause of the trouble.

When the fixer encounters a loom giving this trouble, the quickest and surest way to locate the cause is to concentrate his attention on the lug strap. After each pick, the lug strap is supposed to drop back far enough to completely clear the picker stick when the stick falls back in its resting place against the check strap. When the picker stick is in this position, the shuttle point contacts the picker and

moves the stick back to its resting place at the end of the lay. If the fixer will watch closely, he will see that the lug strap will not drop back far enough to clear the picker stick on every pick, but will still be against the stick when it is stopped by the check strap. This is caused by a slight binding of the pick shaft. When the shuttle point contacts the picker coming into the shuttle box, the acceleration of the shuttle will have been greatly reduced and there will not be sufficient force in the drive of the shuttle to force its way to its proper place against the check strap and the additional pull put on the picker stick by the binding pick shaft.

The pick ball is mounted on the pick shaft and the weight of the ball coupled with the design of the pick shaft will force the shaft to fall into running position at all times, carrying the pick shaft and lug strap along with it, unless the shaft is binding through need of lubrication or unless one or both pick shaft bearings are out of line.

What Goes On Market-Wise In Carpets?

By HERBERT L. SHUTTLEWORTH II, President, Mohasco Industries Inc.

Here is a pertinent description of the current composition of the carpet industry, an analysis of some of its problems and an appraisal of its outlook. Mr. Shuttleworth's remarks were made to a recent meeting of the New York Society of Security Analysts.

ONE concept that is vital to an appraisal of the carpet industry today is the distinction between woven and tufted carpet. Until recently, practically all machine-made carpet was *woven* carpet. Basically, there are four major weaves—four major kinds of woven carpet—namely, Axminster, velvet, Wilton and chenille.

Tufting differs from weaving in that the face yarns are literally punched or sewn into a prefabricated back. In other words, in tufting the back of a carpet has been prewoven, and the face yarns are inserted with a tufting machine.

This distinction between weaving and tufting in terms of the nature of the manufacturing process is, however, of less importance in understanding the industry than is the distinction in terms of capital requirements. Woven carpet is made on large, intricate, expensive looms. Their rate of operation is such that quite a number would be needed to produce a volume large enough to be marketed efficiently. Tufted carpet, on the other hand, is made on machines which actually produce carpet at 12 to 15 times the speed of conventional looms. A tufting machine with creels can be purchased for about $27,000. Enough looms to produce the same yardage that could be made on one tufting machine would cost about $350,000. An additional $200,000 expenditure would be required for the auxiliary equipment. In short, it takes about half a million dollars more investment in equipment alone to get into woven carpet production on a small scale than it does to start a tufting operation of comparable capacity. If to this amount we add the additional floor area and labor required in weaving, as compared with tufting, the differences become even more substantial.

It is this relatively high production capacity of the tufting machine and its relatively low initial capital cost that has made possible the entry of new firms into the carpet industry in recent years.

Numerically, the industry is now dominated by tufted producers. There are only 26 woven carpet manufacturers in the United States, eleven of which have their own tufted lines. But there are about 90 additional concerns that make carpet of only the tufted type. Approximately half of these 90 concerns confine their operations to small scatter rugs and bath mats.

Trend in Tufting

The rapidity with which this new manufacturing technique—new at least for carpets, but used earlier for bedspreads—developed, is evidenced by the yardage figures for rugs and carpets that are four by six feet or larger in size. Only four years ago, in 1951, industry production of tufted carpet amounted to about 6,000,000 square yards, less than ten per cent of the total yardage produced. Last year tufted production amounted to about 42,000,000 square yards, equal to about 40 per cent. At the same time that this 36,000,000 square yard increase was taking place in tufting, woven carpet yardage remained constant.

It is my belief that tufted volume will continue to grow under the stimulus of new techniques and developments. The first tufted carpets were plain, one-color products. Patterned effects in one color were introduced about a year ago. Recently Mohawk introduced the first multi-level, multi-colored tufted carpet in a design effect. Other developments will follow, which should further promote the growth of tufted volume.

A very logical question that you will have at this point is what effect this development is going to have on the value of weaving equipment. Will it make the conventional looms and auxiliary equipment obsolete and worthless? My belief is that it will not. The rapid growth of tufted production was possible because the product reached a market that conventional woven carpet made of wool had not reached. Tufted carpets were first made of cotton—now they are predominantly carpet rayon. Both fibers are cheaper than wool—both color clearly and brightly—and thus a considerable volume of low-priced, attractive merchandise was made available.

But tufting still has deficiencies compared with conventional woven carpet. It cannot, for example, produce the clean, well-defined and multi-colored patterns that are possible with the Axminster weave, which today accounts for 38 per cent of the woven carpet yardage. Neither can it produce the textures and patterns available in a Wilton weave, which today represents 24 per cent of total yardage. Most directly affected by tufted products will be the velvet weave, which now accounts for 35 per cent of total woven yardage. But even this weave, I believe, will maintain a

substantial volume. The quality of surface finish and the "feel" that characterizes any good woven carpet has not yet been matched by tufted products. I should add too that you can expect to see the woven industry come up with new techniques from time to time which, I'm sure, will continue to attract a substantial number of customers.

Industry Problems

May I turn now to a discussion of the industry's major problems, and what is being done to solve them. In this discussion, I will be concerned primarily with the woven segment of the industry.

(1) *Sales.* By far the most important problem of the industry concerns its erratic sales performance, and its inability to increase sales in proportion to the growth in population, to the increase in income, or in proportion to other commonly accepted measures of normal growth. The record output of 102,000,000 square yards last year represents only 2.1 square yards per household, about the same per household figure as in the early '20s. Fifty years ago production represented about five square yards per household. It is quite evident that carpet has been regarded as a luxury—as a postponable purchase—and that we have clearly lost out to TV, automobiles, and other vigorous competitors for the consumers' dollars.

What is being done about it? Four developments within the past year represent the industry's first aggressive and constructive merchandising programs in decades. There is, first, the industry-wide promotion program carried on through the Carpet Institute. With a budget of a little over $1,000,000, the institute last year began promoting the functional aspects of carpet—that it, its warmth, sound absorption, safety, ease of maintenance, and beauty—through magazine advertising, radio and television appearances, public lectures, and the like. Many of you have, as a result, become familiar with the slogan "Home Means More with Carpet on the Floor." This year the program will be continued, with color advertisements, educational materials for high schools and colleges, and with other means. It is our hope and expectation that this program will initiate an upward trend in industry sales.

The second major step in strengthening our sales position is installment selling. Last year was the first year that the installment selling of carpet received substantial backing from manufacturers. Several major manufacturers introduced their own plans, and Mohawk sponsored the Allied Building Credits plan. This year practically all of the large manufacturers in our industry have associated themselves with the A.B.C. plan, and I know that industry markets will be expanded as a result of this support.

The third recent step is the development and promotion of in-the-home selling programs. This technique is proving most effective in closing a high percentage of sales.

And finally, the industry has been working closely with the F.H.A. in developing standards for carpet, the payment for which may be included under a F.H.A. mortgage. When approval is obtained, another significant opportunity for increased sales of carpet will have been opened.

It is my belief that these developments reflect the awakening of the industry to its hitherto realized, but undeveloped, sales opportunities.

The sales outlook for domestic producers, however, includes one potentially serious threat—imports. Machine-made imported carpets, primarily from Belgium and England, but also from France, Italy and Japan, have been increasing. For the first 11 months of last year, imports were 38 per cent above the same period last year, and represented 6.7 per cent of domestic production. Producers with a heavy Wilton volume will be particularly affected, since Wilton imports represented 13.1 per cent of domestic production.

Although our industry is taking a strong position against further tariff reductions on machine-made carpet, we recognize that the possibility exists that further reductions in the rate, which is now 25 per cent, may be made. To what extent further reduction will encourage more imports, we cannot predict, but there is no doubt that it will encourage them.

(2) *Pricing.* A second industry problem is pricing. Probably the practices in our industry are no worse than in appliances and other competitive fields, but we certainly have our share of practices that I consider undesirable and unnecessary. For example, cash discounts of almost five per cent are given for payment within ten days—four per cent for payment within 60 days. In addition, volume rebates are given to retail outlets, going up to five per cent of annual purchases. Dumping and large-scale "deals," some of which were motivated by the necessity to alleviate tight cash positions, have taken place. And finally, carpet for commercial installations is today being sold at prices which yield little or no profit.

It is my belief that the Mohawk-Smith merger will help in stabilizing the industry, but I have no permissible solution for the type of questionable industry practices I've mentioned.

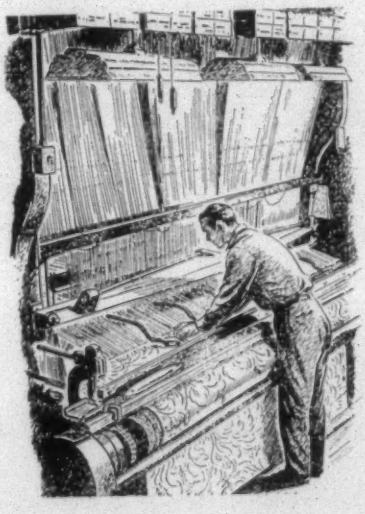
(3) *Raw material supplies and costs.* The third problem that has bothered this industry in recent years is the fluctuating supply and price of wool.

Wool is the principal raw material used for surface yarns in woven carpet, and domestic producers are completely dependent upon imports for their supplies because local wools are too fine and too soft for carpet. Currently, Argentina is our principal source of supply, accounting for about 50 per cent of the carpet wool purchased by the industry. Before the Communists got control of China, that country was an important source of excellent carpet wools, accounting for about 35 per cent of our supply. Aside from natural factors affecting supply, therefore, we are affected by international relations, as in China, and by governmental action, as the export quota in India and export licenses in Argentina.

As a result of these factors, the price of carpet wool has fluctuated violently within relatively short periods of time. Since carpet manufacturers must maintain substantial inventories and commitments as a protection against shortages, they assume the risk of adverse price fluctuations. To illustrate this risk, here are some facts on Argentina wool. In 1949, prices averaged 54 cents a pound—during 1950, the price rose steadily, reaching $1.65 by December. Three months later, in March 1951, it reached its peak at $2.30 a pound. Today the price is about 89 cents a pound, about 17 per cent above the 1952-54 average. You can readily see the inventory risk that is assumed by large manufacturers who may have several million pounds of wool in inventory or on order. Unfortunately, hedging operations to protect

against price fluctuations have not been considered feasible, since the wool futures market relates to apparel wools whose price movements do not parallel those of the heavier carpet wools.

Wool price fluctuations have other undesirable effects too. With anywhere from one to four pounds of finished yarn on the face of a square yard of carpet—the equivalent of 1-2/3 to seven pounds of raw or grease wool—you can see how directly carpet prices are affected by the price of wool. An increase in the price of wool can quickly eliminate profit margins—either by increasing production costs or by forcing price increases which curtail sales. The poor profit showing of the industry from 1951 to 1954—less than one per cent of sales for publicly owned companies—is largely the result of a cost absorption policy followed by all firms in the industry. Profit margins in 1955 were more favorable, for two general price increases on carpet were made during the year without causing any noticeable repercussions on sales.



Substantial progress in freeing the industry from dwindling wool supplies and an unstable wool market has also been made through the development of man-made fibers suitable for carpet. Today carpet rayon costing about 37 cents a pound, accounts for about 15 per cent of the fiber consumption in woven carpet production, and probably about 80 per cent in tufted production. Rayon dyes beautifully, and the problem of rapid initial soiling is being overcome through treatments that are constantly being improved. Nylon will probably be used somewhat more in the future as a result of the recent drop in price from $1.50 to $1.20 a pound. It too dyes beautifully, and wears extremely well. It soils more quickly than wool, but it can be cleaned more easily.

There are other fibers in use, such as Saran, and others in development, that offer the industry increasing protection against the wide price fluctuations in wool, and its diminishing supply.

Outlook for the Industry

From my comments on the progress that is being made by the industry in solving two of what I consider its three major problems, you must know that I am optimistic concerning the outlook for our industry. It has just recorded its best year, in terms of physical output. Production of rugs and carpets, excluding all mats and scatter rugs, amounted to 102,000,000 square yards. This record production has been achieved without any general increase in finished goods inventories, and the outlook for the future is to us encouraging.

In the immediate future—that is, for 1956—we see no sign of any reduction in the demand for soft floor coverings, although I recognize that changes in consumers' disposition to spend may affect our industry quickly. Employment generally is good, personal disposable income remains high, and I believe, as Earl Puckett, board chairman of Allied Stores, pointed out recently, that there has been a noticeable switch of emphasis from hard lines to "soft goods." The recent increases in the rate of savings to almost $20 billions a year has, apparently, had its greatest impact in slowing down the purchases of automobiles and some other big-ticket items, which were bought very heavily last year, possibly somewhat ahead of normal need.

Our longer run outlook is, I believe, also good. In fact, a look at some of the social and economic factors that have a bearing on the potential market for carpet is most encouraging.

Every year our population is increasing by about 2½ million people. Population growth will increase the need for home furnishings.

Residential building, barring a war or depression, will remain high. The 1955 volume of new home construction, or even a lesser volume, represents a tremendous potential market for carpets. Let me illustrate, using average floor space figures developed by the U. S. Department of Labor in its study of the characteristics of new housing in 1954, and "carpetable area" figures developed by a Midwest housing research concern over the past three years.

Let's use the approximate 1955 figure for new homes built—1,300,000. The average floor space of one family homes, excluding basements, attic space, porches, and the like, is about 1,140 square feet—two family units and multiple dwelling units are larger, but for simplicity we'll use the 1,140 square foot figure Carpetable area—that is, excluding kitchen, bathrooms (although these too are carpetable), laundry, closets, storage, and some hallways—represents 70.6 per cent of the total. The mathematics work out to over a billion square feet, or over 115 million square yards, of carpetable area in new homes built last year.

This area alone is 13 million square yards larger than the record output of 102 million square yards by the industry last year. One has only to think about the carpetable floor area in the 42,000,000 dwelling units already in existence—in the thousands of hotels, motels, churches, stores and office buildings already built, and being built every year—to appreciate the tremendous market for soft floor coverings. It is the possibilities of developing this market even only fractionally more than we have at present which many of us in this industry consider a stimulating challenge.

There are, I might add, some encouraging trends which will help us. The percentage of home ownership, which I am sure encourages an interest in home improvement and, therefore, carpet purchases, has been rising steadily—in 1955 about 24,000,000, or 57 per cent of the total dwelling units, were owner occupied, compared with 20,000,000, or 53 per cent, in 1950. This increase may in part be responsible for another favorable trend that has been noted by officials of the F. W. Dodge organization—the gradual increase in general housing expenditures, of which rugs and carpets is a small part, from a normal six per cent of the family budget, to an estimated seven per cent by 1961.

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How Automatic Process Control Can Help To Achieve Steam And Fuel Economy

By LEO WALTER, Consulting Engineer

The following brief survey of recommendable methods for reduction of heat consumption has been written for management of textile finishing plants, and is presenteed in more or less non-technical form. The textile technologist and engineer usually has to keep abreast of production developments, but seldom has time to study progress in heat economy. Although fuel is plentiful in the United States at the present time, economies in the fuel bill never are out of order in competitive production.

ONE of the main reasons why management and the plant engineering department of textile mills should be interested in heat economy is the indisputable fact that increase of thermal efficiency of plant equipment invariably improves over-all plant efficiency.

Saving of steam in the finishing department by introduction of certain heat economy measures will thus produce a double benefit. It will reduce the fuel bill and will improve quality and cost of manufacture. Introduction of improvements in the boiler and powerhouse will not only bring fuel cost down, but due to supply of steam at constant pressure and at adequate volume all the time to manufacturing departments will increase over-all efficiency of production. What a blessing it is in a vertical plant to have steam available during the whole working shift without drop!

The benefits of increasing thermal efficiency have to be considered not only from the amount of money saved in the fuel bill, but also from many "invisible" savings which result in an indirect way from heat economy measures. A point very carefully to be watched is that steam generated in the boilerhouse in an economical way is not wasted afterwards during distribution and use in the various processing departments.

The Use of Process Steam

Working conditions in many plants have produced steam starvation at certain periods where periodic peak steam demands make processing in finishing departments difficult. The boiler load is at certain time periods bigger than it should be, and steam pressure drops and delays operations, such as heating of water or liquors, or drying of fabrics, etc. The obvious remedy, either to install a larger boiler or to install a steam accumulator, involves severe financial outlay. Often steam accumulation, beneficial as it would be, has to be turned down flatly because of the financial outlay involved. Thus a more or less silent and continuous battle develops between boilerhouse and manufacturing departments.

There exist, however, various remedies for steam starvation or pressure drop in steam supply mains worthy of investigation. Reduction of peak load demands on the boilerhouse can be achieved by reducing steam consumption in general. New boiler accessory devices are available whereby an existing redundant but otherwise usable boiler can be transformed into a steam accumulator at reasonable cost. By reducing the steam consumption per unit output of finished goods, boiler peak loads can be reduced. By eliminating out-dated steam heating equipment in the finishing department it is not only possible to increase actual production of goods, but at the same time to cut out excessive steam consumers. Utilization of effluents of steam-heated units is another method for easing boiler load.

Similarly, power load may be reduced or steam consumption improved by close investigation of indicator diagrams. The target in a well-organized textile plant should be to use dry saturated steam at the lowest possible constant supply pressure for process and space heating, but at the highest possible pressure and temperature for power generation, with utilization of back-pressure or pass out steam for process work.

Combined Power and Process Steam

During recent years the use of combined power and heating units has made great progress in textile plants where the steam-power ratio is suited to back pressure generation throughout the year. There are many instances, however, where small back-pressure steam power units can be used with advantage, such as fitting of air heater fans or of unit heaters with small back-pressure steam turbines instead of electric motors, whereby the exhaust or back-pressure steam heats the heating elements. A survey of power economy will not come amiss in many textile plants where the demand of power exceeds the amount of back-pressure steam.

Benefits of Instrumentation

The prominent part which instrumentation plays in fuel and heat economy during generation and use of heat for processing or space heating in textile plants need not be

emphasized. Measurements of working factors, such as temperature, pressure, rate of flow, liquid level, etc., have become standard practice. There is scarcely any installation of a new plant or of finishing equipment performed without using measuring instruments. Automatic process controllers in finishing repay their installation cost partly from heat and fuel economy achieved, partly from increased output of more uniform goods at higher quality, and last but not least, from saving of labor.

A heat flow process can be either adequately controllable, or it may be more difficult to control. Good controllability of a heat flow process in finishing such as washing, scouring, bleaching, dyeing or drying allows bigger steam and fuel savings, with less elaborate and lower priced controller types. It should always be an aim to design and install finishing plant equipment which is very easily controllable. This has nothing to do with the question of output, or equipment design in a broader sense, although generally speaking, efficiency of output and controllability of plant equipment usually go hand in hand. A new machine or apparatus using steam might have been designed for maximum output, but the designer might not have consulted the control expert in the first stage of the design about prospects of automatic steam control, with subsequent lowered controllability. A hot water storage tank having steam coils might hold the required water volume, but keeping the hot water temperature steady may not be as good as desired, because controllability of the vessel has been neglected when sizing and locating the heat coils.

Very often a finishing process vessel, containing a liquor and heated by steam coils, has been designed with low controllability, although it fulfills other production requirements. Another example is a hot air dryer which apparently works well under steady conditions, but is less elastic to change of heat load. For achieving efficient automatic temperature and humidity control the dryer design should have definite characteristics. Wherever a heat flow process is concerned using steam or hot water and proves to be difficult for control by hand, the first step before fitting automatic temperature controllers, or other control instruments, must be to investigate controllability of equipment. Where controllability of a scourer, a drying machine, or of a drier by hand is low, this must be put right first. After this has been performed, steam and fuel economy by means of automatic control instruments can then be considered, and economies will then be achieved by using the right control method.

Economies of Heat Control

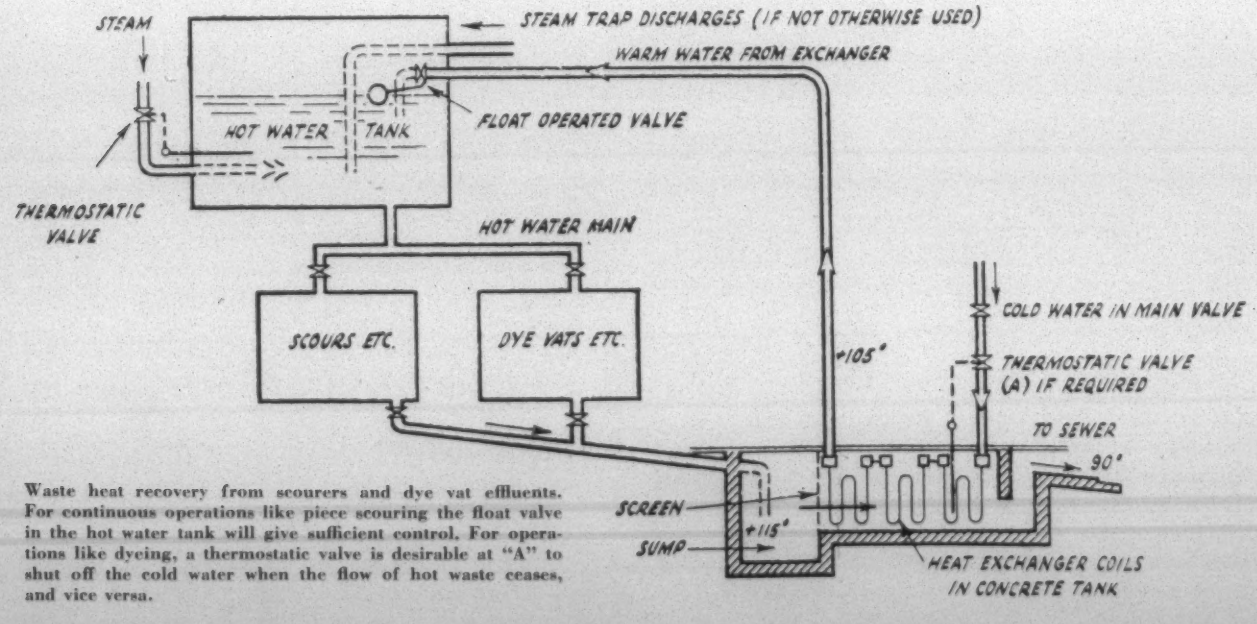
When reorganizing the layout of an existing finishing plant, or when altering a manufacturing method using heat, it will always pay to call in the control expert. The same applies when designing "home-made" plant equipment, such as hot air dryers, heating vessels, etc., or when reconstructing same. There are still some really horrible specimens of self-made hot air dryers in operation with either over or under-dimensioned heating surfaces and fans, or wrongly placed and under-sized air outlet openings, and the like. These dryers are scarcely controllable, but waste steam and fuel all the year around, and are often only kept in operation because they have been "home-made." To apply control instruments to such dryers could be wasted money, because their controllability is usually very poor. After all other means, such as improved dryer insulation, recirculation of air, etc., have been applied to get steam consumption down, the installation of automatic control instruments will then improve dryer efficiency to the top limit, and keep it there.

It is not always easy to assess the cost of installing additional process instruments, or of automatic controllers replacing measurement. Often several alternative schemes will have to be put forward for discussion, and exact figures will have to be produced to justify the capital outlay.

Once agreement has been reached on general lines as to the amount of money which justifiably can be spent on improved process instrumentation, the time has come to specify in detail the required controlling instruments, and then to ask instrument makers for bids.

Carrying Out a Survey

The case for measurement in finishing needs no justifica-



Waste heat recovery from scourers and dye vat effluents. For continuous operations like piece scouring the float valve in the hot water tank will give sufficient control. For operations like dyeing, a thermostatic valve is desirable at "A" to shut off the cold water when the flow of hot waste ceases, and vice versa.

tion, and lack of essential measuring instruments becomes rare, as time goes on. With indications and chart records from instruments for all quantities available at any time, plant operators have become very skilled in interpreting plant performance.

In some instances, very modern processes demand automatic control, because manual control would be either impossible, such as in certain chemical processes, or unprofitable. These are other instances, where automatic control does not come in at all, or would require so little or infrequently, that occasional hand control is sufficient. The great majority of industrial processing operations, however, can be greatly improved by using automatic control methods. When performing a plant survey with a view of improving instrumentation, the following considerations will influence the decision, whether to apply fully-automatic control, semi-automatic control or manual control with improved measurement:

(a) The first installation cost of automatic controllers.

(b) What are the prospects for proper servicing and maintenance?

(c) How can all these costs be recuperated: (1) from savings of heat and fuel; (2) use of less, or of unskilled labor; (3) avoidance of spoilage of goods; (4) from improved and more regular output; (5) from improved quality and uniformity of the goods; (6) from general increase of trouble-free production and elimination of a bottleneck?

These and more questions may turn up during a plant survey on instrumentation, and have to be answered by co-operation between the instrument expert and the works engineer. Against the use of automatic control is sometimes the fact that the process requires only very approximate accuracy, and has to be continuously supervised, so that the fitting of an alarm instrument will suffice to avoid excess pressure or temperature. Very dirty and rough working conditions might also prohibit the use of delicate control instruments.

Once the conclusion has been taken to install automatic control to a particular piece of plant equipment, it is not always easy to analyze the plant in greater detail as to its controllability, process time lags, etc., thus arriving at the correct mode of control to be used. Where the magnitude of a control problem warrants it, it will always pay to entrust a specialized consultant with the job to specify control methods and types of controller instruments.

Utmost reliability of automatic controllers is the first quality which must be present. An unreliable automatic controller is worse than hand control, because plant operators get so accustomed to automatics that they rely blindly on their performance.

Process Control Is Put To Work By Coats & Clark At Toccoa

By DON FOURMAN, Field Engineer, Minneapolis-Honeywell Regulator Co., Atlanta, Ga.

This new thread and yarn finishing plant makes extensive use of automatic controls to improve quality, yield and comfort, as described in a recent issue of *Instrumentation*, house organ of the Industrial Division, Minneapolis-Honeywell Regulator Co.

DURING most of its 143 years, Coats & Clark has concentrated in the domestic thread market, of which it is the leader. With the opening of its new plant at Toccoa, Ga., however, the company launched a drive to increase its share of the industrial thread market. Completed late in 1954 at a cost of $7,500,000, Coats & Clark's thread and yarn finishing plant at Toccoa has many distinctive features. The new plant includes the best and most modern machinery available—and some of the largest in the United States.

A case in point is the double mercerizing range which, including its dryer, measures 440 feet from end to end, making it the longest in the world. And it's as well controlled as any; practically every variable that affects the mercerizing process is under automatic control. Water and solution temperatures are controlled at all 15 mercerizer boxes, while concentration of the caustic solution is also under automatic control.

The concentration of the caustic solution determines, to a large extent, the degree of mercerization. Its control is, therefore, a very important part of the whole mercerizing process. At Toccoa, this job is assigned to a Brown air purge type specific gravity recorder that uses ethylene glycol as a reference liquid. This instrument measures the

***At left* is one of the mercerizing range's four control panels. This panel mounts caustic concentration and temperature controllers for the caustic circulation tank, the first caustic box, the first hot wash, and the second cold wash.**

concentration of the caustic solution in a circulation tank and controls it at a constant 25 per cent by adding a strong caustic solution (43 per cent) as it is needed. The mercerizing solution is circulated between the tank and the range's two caustic boxes while, to maintain purity, some of the solution is constantly being bled and pumped to the caustic recovery plant.

Similar instruments measure the concentration of caustic in the first and second hot wash boxes. The mercerizer operators use the chart records of these instruments as a measure of the efficiency of the wash.

Equipped with an unusually versatile synchro-drive and electronic differential speed controls, the mercerizer can be adjusted to yield practically unlimited combinations of stretch and tension. The drive can also be adjusted while in operation to overcome any discrepancy in yarn tension as soon as it is noticed.

This combination of tension, temperature, and caustic concentration control systems guarantees the efficiency of Coats & Clark's double mercerizing process, which yields a high-luster, high-strength thread.

Moist-O-Graph Control

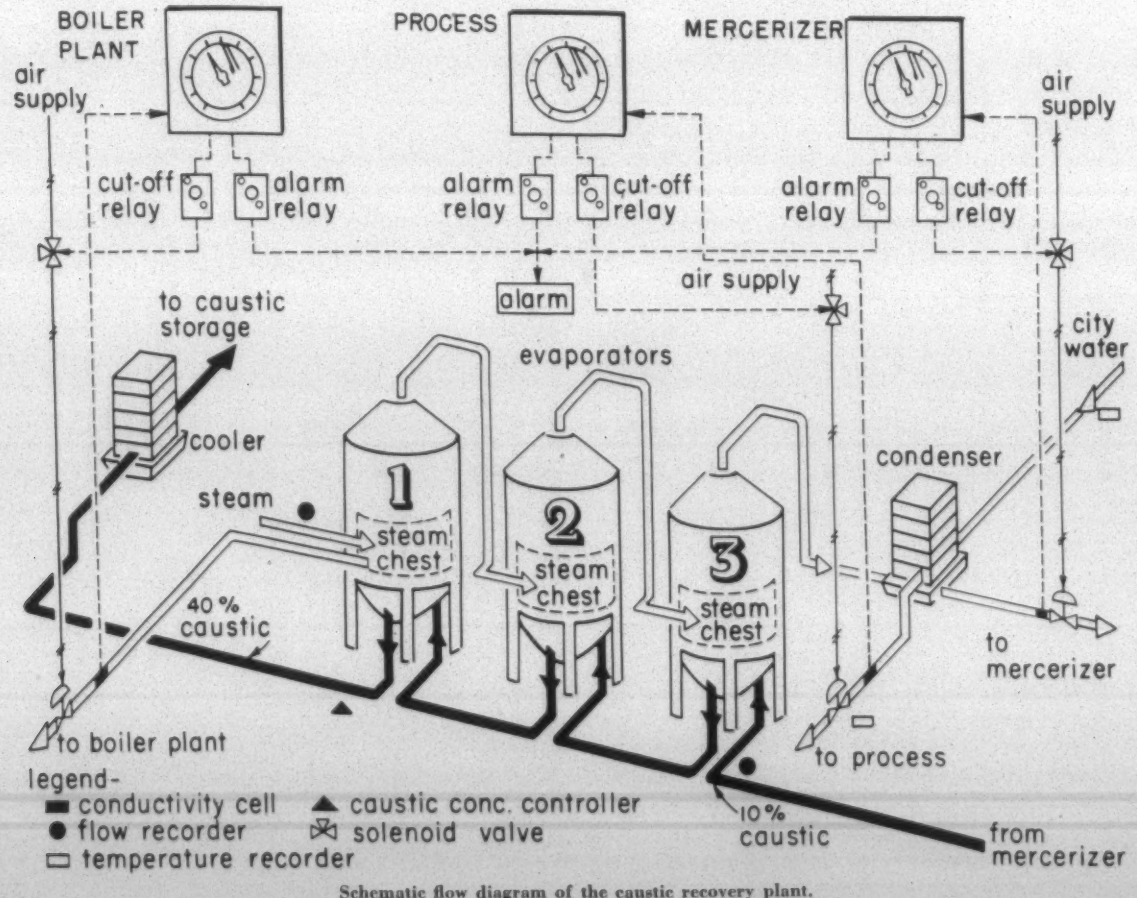
Drying thread or yarn is not simply a matter of heating it up until it is bone dry. The moisture content must be controlled within narrow limits. A wet yarn, for instance, is subject to mildew. If the yarn is too dry, on the other hand, it is brittle and breaks easily.

Coats & Clark chose a Moist-O-Graph cascade control system for the three-zone hot air dryer that follows the mercerizer proper. In the first zone, a thermometer controller adjusts the flow of steam to the heaters to keep air temperature constant. Temperatures in the second and third zones, however, are controlled by an electronic Moist-O-Graph system that measures the moisture content of the mercerized yarn or thread as it leaves the dryer. As moisture content changes, the moisture controller continuously adjusts the set points of two secondary thermometer controllers that, in turn, throttle the flow of steam to the second and third zones.

Caustic Consumption Cut 75 Per Cent

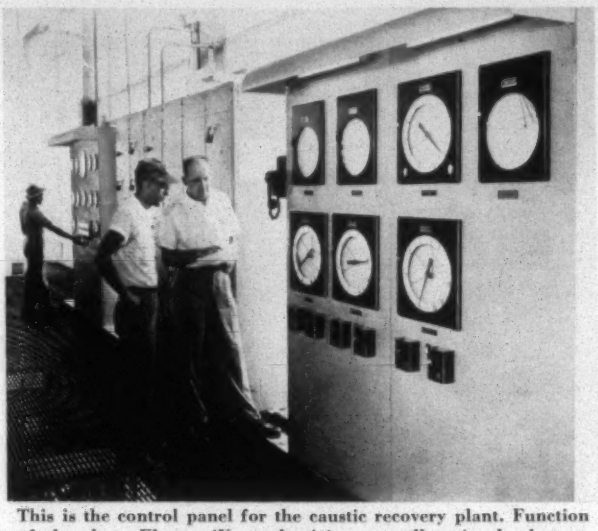
A triple-effect caustic recovery plant has cut caustic consumption at the Toccoa mill by as much as 75 per cent compared with Coats & Clark's other mills. But this is not the only economy of the recovery plant, since it also furnishes as much as 300 gallons per minute of hot process water, all the hot wash water for the mercerizer, and some steam condensate for the boiler plant. Moreover, the whole recovery plant is run by a single operator.

The accompanying diagram illustrates the continuous flow through the recovery plant. Dirty caustic wash water enters the third effect at ten per cent and is concentrated to 40 per cent as it flows through the evaporators. Steam is required only at the first effect; the second and third effects use the vapors from the previous effects. Before being pumped to storage, the concentrate from the first effect is purified by dialysis, where some ten per cent of the caustic is taken out with the impurities. This is the only waste in the whole continuous recovery process.



Schematic flow diagram of the caustic recovery plant.

From the mill management's point of view, the three ElectroniK conductivity controllers that are shown in the diagram of the recovery plant are the most important instruments in the whole Toccoa mill. Much of the economy of the caustic recovery plant stems from the by-product heat that is recovered from it as hot water for the boiler plant, for the mercerizer, and for the mill. The conductivity controllers keep these three hot water lines relatively free of caustic contamination, to prevent damage to expensive equipment.



This is the control panel for the caustic recovery plant. Function of the three ElectroniK conductivity controllers in the bottom row is explained in the accompanying text and illustrated in the schematic diagram.

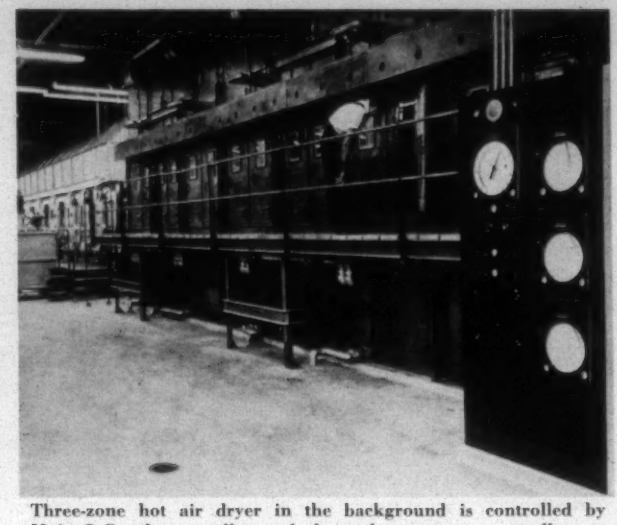
Boiler plant equipment, for instance, can tolerate no more than a trace of caustic. If the conductivity controller should detect an excess of caustic in the steam condensate return to the boiler plant, it immediately stops the flow. Here's how it happens. A back-set mercury switch on the main drive gear of the recorder completes the circuit to a Honeywell cut-off relay. The relay, in turn, opens a solenoid valve in the air line to a Honeywell diaphragm control valve in the steam condensate line. This action applies air pressure to the direct-acting control valve, closing it, and interrupting the flow of steam condensate to the boiler plant. For safety reasons, the cut-off relay must be manually reset before the control valve can be opened again, even if the caustic contamination has been eliminated.

Simultaneously, the conductivity controller energizes an alarm silencing relay that turns on a red signal light and an alarm. The alarm can be silenced by pushing a button in the relay, but the red signal light stays on as long as there is caustic contamination. When the contamination is corrected, the signal light goes out and the alarm circuit is automatically reset.

The other conductivity controllers operate in the same way except that a much greater percentage of caustic can be tolerated in the mercerizer wash water before the alarm is sounded and the flow is cut off.

Over $500,000 for Air Conditioning

The Toccoa mill's 857-ton main refrigeration system supplies conditioned air to all the dry finishing areas in the mill. It also cools the water and caustic solution for the mercerizer, and the liquor for the bleaching machines. A second system serves the cafeteria and offices, while a third, much smaller one, supplies the physical testing laboratory with air that is strictly controlled at 70° F. and 60 per cent relative humidity. All three of these systems are Honeywell controlled.



Three-zone hot air dryer in the background is controlled by Moist-O-Graph controller and three thermometer controllers *at right*.

In the wet finishing areas of the mill, air is exhausted, cleaned, cooled by evaporation, and recirculated. Atomizers, automatically controlled by Honeywell humidity controllers in different areas of the mill, increase the humidity of the air where needed.

Selecting And Applying Electrical Measuring Instruments In Textile Mill Maintenance

By ROBERT S. WHITE, Chief Electrical Engineer, Universal Winding Co., Providence, R. I.

This guide to the selection of adequate instrumentation for successful trouble shooting in textile operations was presented by Mr. White at this month's American Institute of Electrical Engineers Textile Industry Conference in Atlanta, Ga.

IN any electrical circuit there are several components such as a motor, controller, wiring, etc. Each of these parts has certain measurable electrical properties of power, resistance, inductance and capacity at a given current and voltage. These properties were probably measured and suitably proportioned during the development of the device or circuit.

Frequently in the use of an electrical device or component, however, no electrical measurements are made, but where safety and economy are important, a continuous check of performance may be kept by an electrical instrument. A continuous check may prevent serious trouble by indicating a gradual change in some electrical characteristic. An ammeter used to indicate charge and discharge of an automobile battery is a common example of continuous checking. In all cases, when trouble occurs, electrical instruments can aid in locating it. Indeed they are often indispensable for the analysis necessary before repairs can be made.

There are three general fields of use for electrical instruments. The first field is development, where new products are being engineered. Efficiency, economy and life are tested prior to manufacture. Second is checking the performance of equipment, products or processes. Trouble-shooting fills the number three slot. Checking includes maintenance where routine tests are made to determine that the loads on mains and feeders are not too great.

Instruments employed in checking service need not be connected to a circuit at all times. Economy may dictate that one ammeter and one voltmeter suffice to monitor all phases of a certain polyphase system necessitating switching the instruments from phase to phase. A clamp-on type of ammeter may be used at irregular intervals to check the loads on several motors in a mill. If the checking or process monitoring instruments are properly selected, permanently connected, carefully maintained and accurately read, the information available from them can be invaluable to quality control and continuity of production. Any deviation from a familiar normal or average value for a particular function is a free-warning of trouble brewing and steps can be quickly taken to determine the reason for the unusual indications.

Instrumentation in the trouble shooting field can present very real problems. The plant engineer, assuming that there is a place for them in his budget, must determine the best kind and the quantity of instruments needed by his electrical people. His choices are governed by the kinds of power, ratings of largest and smallest loads and the characteristics of these loads. Naturally, many of the checking or monitoring instruments serve a secondary function as trouble-shooting tools, but only in those circuits to which they are permanently connected. A process control instrument should never be used for trouble shooting in another circuit. Sooner or later you'll forget to put it back, or the other fellow will hang a lower voltage meter on a 600-volt circuit and there will be nothing to put back!

One of the most surprised—and lucky—men I have seen, was an employee of one of our Fluflon licensees. During the installation of the machinery, a technician had been using (correctly) a combination volt-ohm-milliammeter to measure the resistance of a control circuit element. Our lucky man borrowed the instrument, still adjusted to indicate resistance, and applied the test probes across one phase of a 440-volt power circuit. The fault current, flowing through the little dry cell in the meter circuit, produced enough heat to disintegrate the battery and the instrument case along with it, but without injury to the workman, which brings us face to face with the instrument selection and application problem.

The most important single factor to be considered in selecting an electrical instrument is the kind of current—whether it is alternating or direct. The first step, then, is the selection of the proper movement type. For direct current, a permanent-magnet moving coil instrument with its linear scale and low sensitivity to external magnetic fields is preferred. Alternating currents at commercial frequencies can be measured best with dynamometer or repulsion iron-type instruments.

The second step is the selection of the proper full-scale range for the quantity to be measured. Here, some knowledge of the circuit or component is helpful, such as the fact that a 550-volt line is to be used or that the full load current of a certain motor is 27 amperes. When the amplitude of the voltage on a power circuit to be measured is unknown, a Wigginton circuit tester can be used to ascertain the approximate voltage This same tester will indicate whether the circuit is alternating or direct current by vibrating on alternating current When used with a steady resistive load, no 600-volt voltmeter would be harmed on a ten-volt

circuit, but a ten-volt instrument on a 550 or 600-volt circuit would certainly be damaged. Since most instruments have their accuracies specified as some percentage of the full scale value, more precise readings can be obtained when a range is selected which will allow pointer deflection to about 75 per cent of full scale. When an ammeter is being selected, great importance must be attached to the selection of the scale range. Some cases of changing loads like motors, tungsten lamps and capacitors are apt to damage ammeters, if the circuit behavior is not fairly well understood. D-c ammeters should be protected against the heavy charging current of capacitors, the low reactance starting loads of motors and the low resistance of cold lamps, by using shorting switches which can be opened after steady state conditions obtain. Voltmeters must be protected against damage due to extremely high induced voltages, such as might be caused when the field circuit of a motor is opened. The instrument must be disconnected from the circuit by removing a lead or by opening a series switch. Thermocouple-type ammeters have two serious application drawbacks when they are considered in the trouble-shooting category. They have very low overload capacity and, usually, square law scales which crowd the lower half of the full scale range into one-fourth of the scale length.

When the proper type of instrument has been selected, there are three very practical precautions which should be observed. The first two affect the accuracy of the readings and are the presence of strong external magnetic fields, which could be due to heavy current flow in adjacent conductors, and the wave form of the current and voltage in the circuit.

A short time ago one of our engineers was investigating the effect of a wide range of a-c voltages on the operation of a relay. He was using a Variac as the adjustable voltage source and an unshielded repulsion-type voltmeter to measure this voltage. The instrument indication became very erratic and was indicating a higher output voltage than the Variac was capable of producing. The higher reading was observed only while the relay was connected to the Variac. We finally learned that the voltmeter was being affected by the magnetic field around the Variac. The third, but not the least, important is the line to ground potential of the circuit. The insulation rating of the instrument must not be exceeded if it is mounted on a grounded panel or placed on a machine during circuit testing .

There are some definite standard application rules for the use of shielded and unshielded instruments near strong external magnetic fields. A good working rule in trouble shooting, if the instrument accuracy is to be preserved, is to space the instrument at least one diameter (or face width) away from suspected magnetic fields or other instruments. Most clamp-on type instruments are designed so that the movement will be safely beyond the field produced around the conductor in which the current flow is being measured.

Wave forms, particularly in certain types of direct current circuits, can make a great difference in instrument indication. The interpretation of an indication is frequently influenced by the wave shape of the current or voltage in the circuit.

In addition to the circuit requirements which influence the selection of an instrument, some thought must be given to any unusually severe conditions which may exist external to the instrument. Instruments of modern design can be used over a fairly wide range of adverse conditions, but large variations in temperature, humidity or vibration might dictate the use of special enclosures or mounting methods.

At Universal we have recently traced the reason for the high mortality rate of a three and one-half inch voltmeter mounted on the cover of a control enclosure, to a relatively high rate of vibration. This vibration caused loosening of a screw which supports the multiplier within the instrument case. Obviously, panels upon which instruments are mounted should not be drilled or subjected to impacts until after the instruments have been removed. We are very familiar with a certain precision portable voltmeter whose upper control spring can easily be tangled, turn upon turn, if the instrument is jarred in a direction normal to the plane of the spring. High humidity and corrosive atmospheres have just about the same adverse effect upon instruments. The difference is one of degree. Instruments used in areas of high humidity in mills may experience accumulations of moisture within the case if the room temperature drops suddenly. Periodic examinations of the interiors of instruments, used under questionable ambient conditions may be well worth the time spent.

As already cited, the accuracy of an instrument reading can be affected by the wave shape of the applied voltage or current. In general, this consideration applies to direct circuits where the choice of instrument type depends upon whether the source voltage is steady—if a battery; contains a ripple component—if a generator; or is pulsating—if the output of a rectifier.

Instruments of the permanent magnet moving coil type, characterized by linear scales, measure the average value of voltage or current. Electro-dynamic, repulsion iron and thermocouple-type instruments indicate the effective or root mean square value of the characteristic being measured.

On steady direct current any of these instruments will give exactly the same indications. When the output of a generator must be measured, there will be a difference in reading between r.m.s. and average instruments, depending on the amount of ripple. When the minimum voltage due to the ripple is not less than 65 per cent of the maximum voltage, the difference indicated by the two types of instruments will not exceed one per cent. Practically, the instrument accuracies except when brand new are probably worse than plus or minus one per cent, so that either kind of instrument could be used in most direct current power circuits where the ripple voltage is low. The general practice, however, is to use averaging (permanent magnetic moving coil) instruments to measure steady and ripple direct currents. When the output of rectifiers must be measured, r.m.s. instruments should be used, especially when the loads are resistive and the production of heat is the function of the system. If only averaging instruments are available and there are no filtering or smoothing components in series with the load, the instrument reading must be multiplied by a form factor suitable to the wave shape of the voltage or current. When the current is half wave direct, the indication of the permanent magnet moving coil instrument must be multiplied by 1.57. If the rectification is full wave, the multiplier is 1.11. When all three phases of an alternating source are rectified into one output, the instrument is looking at a low ripple characteristic and the indication may be used without a correcting multiplier.

In direct current circuits two instruments, an ammeter and a voltmeter can be used to completely describe the behavior (or misbehavior) of the circuit. The types of instruments should be chosen with the foregoing information in mind.

At best, trouble-shooting can be quite abusive on instruments and probably all of the wrong things which can be

done to instruments will be done to those that are used in trouble shooting service. Extremely high accuracy is, usually, not a requisite since most industrial equipment can perform satisfactorily on voltages ten per cent above or below the device rating. The portable-type instrument chosen need not have an accuracy better than one or two per cent, but probably you cannot purchase anything worse than one half of one per cent. Separate units should be used, rather than multi-purpose instruments, so that simultaneous voltage and current readings can be taken. The instrument cases should be the type that have tight fitting covers and leather carrying straps. When not in use they should be stored in locked, clean, dry cabinets. The movements should be the permanent magnet moving coil type, although one or two r.m.s. indicating instruments would be handy to have around. Scales should be evenly divided and four to six inches long for accurate and easy reading. Select a make of instrument that features dull white scales with sharp, deep, black graduations and knife-edge pointers. Portable voltmeters are available in two and three scale ranges. A good range choice will include a voltage scale that is maybe 25 per cent greater than the highest d-c voltage in the mill. The choice of lower voltage ranges will depend upon other common voltages that may have to be checked. Voltmeter sensitivity should be high so that the instrument will not change the characteristics of high impedance circuits. Portable d-c ammeters are available in one or three scale ranges, with self-contained shunts in ranges up to 500 amperes. The highest range selected must be somewhat higher than the full load current of the largest d-c load in the mill. The lower ranges will be governed by other typical loads. A permanent magnet moving coil millivolt meter can be used with a number of shunts, and a set of calibrated test leads, to measure any desired series of current ranges. Incidentally, portable shunts, if used, must be handled as carefully as the instruments they are used with. Nicks or deformation will change the calibration.

In a mill where there are extensive applications of electronic devices and modern control equipment, additional instrumentation will be needed. Multi-purpose, multi-range instruments are commonly used in servicing these circuits. Several manufacturers market volt-ohm-milliameters having large scales calibrated in d-c and a-c volts with five or six full scale ranges from two and one-half volts up to 5,000 volts. Five or more d-c current ranges can be had with full-scale deflections from a 50 micro-ampere low to about ten amperes maximum. Miniature, self-contained 22.5-volt dry batteries permit inclusion of circuits and scales which will indicate values of resistance as high as 40 or 50 million ohms. The movement in these instruments are almost always the permanent magnet moving coil types with 20,000 ohms per volt sensitivity. The various functions and ranges are selected by means of one or two rotary switches. When the instrument is used to measure alternating voltages, a small rectifier is switched into the circuit along with the appropriate scale multiplier. Generally, this rectifier will reduce the effective movement sensitivity to between five and ten thousand ohms per volt. The a-c scales of these combination instruments are usually calibrated to give r.m.s. values of voltage even though the meter movement is actually responding to an average value. The self-contained batteries are subject to shelf life deterioration and should be replaced when full scale deflection (zero ohms) cannot be attained on the highest resistance range, with the test leads in contact with each other.

If test leads for the individual voltmeters and ammeters are made by the plant electricians, the cable construction should be extra flexible stranding with tough plastic or other oil-resistant insulation. Lugs to prevent fraying and to insure positive contact should be brazed or staked securely to the wire. If shunts are part of switchboard equipment, be certain that some of the test leads have legs with holes sized to fit the drop terminals on the shunts. Standard lead length for use with shunts and portable instruments is three feet.

When a voltmeter and an ammeter are being used, at the same time, to check a d-c load, certain precautions are necessary. If the voltmeter resistance is high compared to the load resistance, the voltmeter should be connected across the circuit between the load and the ammeter, so that the actual voltage, across the load, is measured. If, however, the ammeter resistance is very low compared to the load resistance, then the preferable voltmeter connection is across the circuit between the ammeter and the source.

While the characteristics of the d-c circuit can be completely described and its troubles located with only the voltmeter and the ammeter, trouble shooting in anything but the simplest alternating circuit containing only a resistive load may require several additional instruments. To completely describe the input characteristic of a squirrel cage motor, for example, will require a voltmeter, an ammeter and a wattmeter or power-factor meter. Either of the two latter instruments are required because of the reactive nature of the motor load. The magnetizing current drawn by the motor does no work and, consequently, is not integrated into a wattmeter reading. It is real current, however, and must be delivered into the motor windings through the same copper that carries the work producing current.

Most of your trouble shooting in alternating current power circuits will probably consist of load, powerfactor and voltage surveys of main or feeder lines; searches for faults and grounds and correcting faulty operation in the control and power circuits of machinery.

Minimum instrumentation for satisfactory alternating current work should include a clamp-on ammeter and a clamp-on watt or power factor meter. Clamp or hook-on ammeters are invariably designed so that voltage as well as current readings can be made. These instruments are extremely portable and while not precision instruments, they are very useful for checking current flow through main feeders and branch circuits to motors, transformer banks, etc. Accuracies of about three per cent are obtainable with this type of instrument. For highest accuracy and best results the manufacturer's instructions should be followed closely while the instruments are in use.

One popular type of clamp ammeter has six current ranges covering full-scale deflections from ten amperes to 500 amperes and voltage scales of 150, 300 and 600 volts. This type of ammeter utilizes a rectifier-type instrument connected to the secondary of a split-core current transformer, made so that the core can be closed around a current-carrying conductor which then forms the primary winding of the current transformer. The secondary of the current transformer, as well as the moving coil of the indicator, it tapped to provide the various current ratios. Care must be taken to insure that dirt or lint does not accumulate in the air gap where the core separates. Any foreign material which can prevent sealing of the gap will cause the instrument to

read low, because the reluctance of the magnetic circuit becomes greater on a gap length squared basis.

The current range of clamp-type instruments may be decreased by looping the current carrying conductor through the core twice to cut the range in half, four loops for one-fourth, etc. Thus with four loops through the hoop and with the range selector in the ten ampere position, two and one-half amperes will produce full-scale deflection.

When the choices must be made between a clamp-type wattmeter or powerfactor meter, the types of loads should be considered. The wattmeter might be preferred if there are many heating loads connected to the system, but the powerfactor-type probably will be selected when all the measuring will be done in motor circuits.

In larger plants, and even the smaller ones, when more extensive instrumentation is required to insure rapid restoration of service or production, industrial analysers or a-c load visualizers can be used.

The industrial analyser is bulky and heavy, having four instruments, volts, amperes, watts and powerfactor, along with the necessary multipliers and current transformers of a particular circuit is presented simultaneously.

The a-c load visualizer is a single compact instrument also containing multipliers and current transformers, but here only one circuit characteristic at a time can be presented and some factors must be determined by referring to a chart or graph furnished with the instrument.

If single-purpose portable-type instruments are to be selected, the same general consideration outlined for d-c instruments should be followed. Standard portable a-c voltmeters and ammeters indicate r.m.s. values and sturdy iron types are available with accuracies of better than one per cent. These instruments may be bought with one, two or three-scale ranges with voltage scales from 0-10 minimum to 0-750 maximum and current ranges from 0-1 minimum to 0-50 maximum. Most double range portable ammeters are limited to 20 or 30 amperes on the high range scale. Triple range ammeters are usually intended for use with a current transformer at the highest range. When a potential or current has a value beyond the range of an ordinary instrument, or when it is important to insulate the instrument from the circuit to be measured, potential or current transformers should be used. These devices are generally manufactured, in the portable form for use with 0-5 ampere or 0-150 volt instruments. The two precautions in using instrument transformers are exactly opposite for the two types: (1) always open-circuit an energized potential transformer secondary when changing leads to the associated voltmeter; (2) always short-circuit an energized current transformer secondary when changing leads to the associated ammeter. Always ground the secondary circuit of an instrument transformer.

Electrodynamic two-element wattmeters can be used in d-c or a-c circuits and with single phase or polyphase power portable wattmeters should be chosen so that they can be used with the same current and potential transformers that are used with the other portable instruments. Wattmeters are rated three ways: (1) watts full-scale; (2) amperes; and (3) volts. The instrument can be seriously damaged if the maximum current or voltage rating is exceeded even though the pointed deflection does not reach full scale. When a wattmeter is used with a current or a potential transformer or both, the operator must be careful to include all of the applicable multiplying factors corresponding to the ratios of each transformer.

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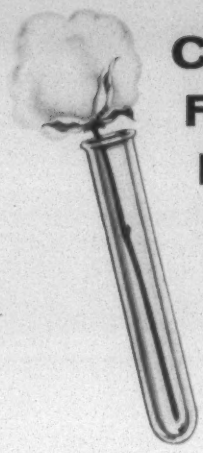

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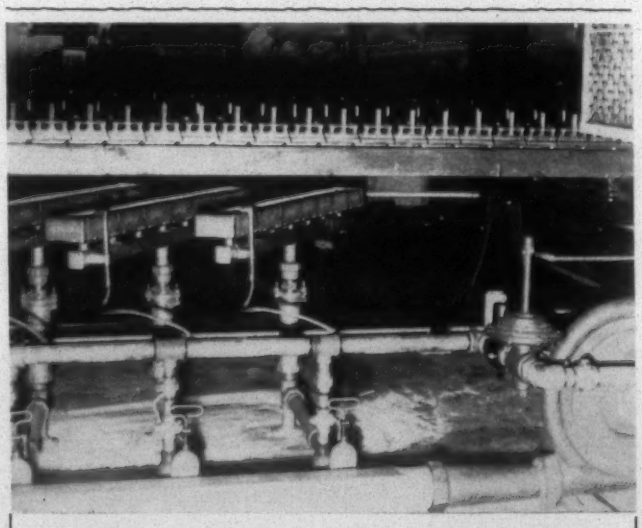

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PERSONAL NEWS

Frank L. Wright

Frank L. Wright has been named director of the manufacturing division of Pneumafil Corp., Charlotte, N. C. Mr. Wright was formerly with Norma Hoffman Bearings, Stamford, Conn., and has been associated with the manufacture of metal products for 35 years. He was educated at Worcester Polytechnic Institute, La Salle University and Temple University. The appointment was effective March 1.

G. R. (Rob) Turner of the organic chemicals department of E. I. du Pont de Nemours & Co. Inc., has been elected president of the Charlotte, N. C., alumni chapter of Phi Psi, textile fraternity. He succeeds Steve Hawes, Johnson Chemical Co., who becomes a member of the executive committee. Other officers include Bill Barnhardt, Barnhardt Elastic Corp., vice-president; and Steve Whittier, Pneumafil Corp., secretary-treasurer. Named to the executive committee, in addition to Mr. Hawes, were Don Hamilton, Cotton Mill Machinery Co., program; Dick Salisbury, Celanese Corp. of America, contacting members; and Jack Killheffer, Du Pont, member-at-large.

Henry R. Childs has been appointed superintendent of the new fiber development division of Tennessee Eastman Co. The new division has been organized to centralize development work on new fibers beyond the research stage. Mr. Childs was formerly assistant superintendent of the acetate yarn division. He has also been in charge of various phases of synthetic fiber development for several years.

A. L. Hubbard has resigned as assistant to the executive vice-president of Mt. Vernon-Woodberry Mills Inc. due to ill health. Mr. Hubbard had been with the firm 28 years.

Thomas W. Estes, executive vice-president of J. P. Stevens & Co. Inc., has announced that he will retire from the company, effective April 30. Mr. Estes joined Stevens in 1930 and has long served as a director and as one of the firm's top sales executives. He will continue as a consultant to the company after his retirement. . . . In connection with the retirement of Mr. Estes, the company has announced that Campbell D. Garrett, a vice-president of the firm, will direct all merchandising and sales activities of the entire cotton goods division. Mr. Garrett joined the company in 1945 and is a member of its board of directors. He will be assisted by James D. Finley, who currently heads the rayon suiting department of the company. Mr. Finley will be succeeded in the latter capacity by Whitney Stevens. . . . Robert T. Stevens, president of the company, has been named a director of General Electric Co. Mr. Stevens had been a board member prior to entering government service as Secretary of the Army in 1952, a position from which he resigned last July to return to the textile industry.

T. Clarkson Worth has joined Amerotron Corp. and will be in charge of cotton and synthetic yarn procurement at Aberdeen, N. C. Mr. Worth succeeds R. S. Ewing, resigned. Since 1952, Mr. Worth had been with Burlington Industries in the yarn purchasing division.

T. Howard McCamy

Thomas Howard McCamy has been named to the sales organization of Seydel-Woolley & Co. of Atlanta, Ga. Mr. McCamy, who recently completed two years as chairman of the Southeastern Section of the American Association of Textile Chemists & Colorists, will represent the company in Tennessee, Alabama and sections of Georgia. He is a graduate of Alabama Polytechnic Institute with a degree in textile chemistry.

John A. Staples, assistant treasurer of Parkdale Mills Inc., Gastonia, N. C., has been appointed vice-president and general manager of National Discount Corp., Spartanburg, S. C. Mr. Staples had been with Parkdale five years. Prior to that he was with Burlington Mills in Gastonia; Spartan Mills, Beaumont Division, Spartanburg; and Reeves Bros.

James F. Sofge, assistant secretary of Graniteville Co., Augusta, Ga., has retired after 21 years with the company. . . . Howard M. Pinner Jr. has been named assistant director of research for the company, succeeding Harry Momeier Jr., who has transferred to Gregg Dyeing Co., a company subsidiary at Graniteville, S. C.

Jack H. Scott has been named assistant to the president of Carlton Yarn Mills Inc., Cherryville, N. C. Mr. Scott was formerly with Durham (N. C.) Hosiery Mills where he was manager of the company's spinning division.

A. J. Andre

A. J. Andre has been appointed to the newly-created post of assistant sales manager, Southern division, for E. F. Houghton & Co., Philadelphia, Pa., manufacturer of oils, chemicals, packings and textile processing products. Formerly a technical sales representative in Houghton's Chicago, Ill., division, Mr. Andre will work out of the company's Southern headquarters in Charlotte, N. C. Prior to joining Houghton in 1939, Mr. Andre was superintendent of the pressed steel division of Mullins Mfg. Corp. He is a graduate of the University of Pennsylvania.

J. B. Talbert has been named general overseer in charge of the worsted unit of Rhyne-Houser Mfg. Co., Cherryville, N. C. Mr. Talbert was formerly with Burlington Industries at its Goodall-Sanford plant, Hot Springs, N. C.

L. D. Quinn Jr. has been named superintendent of Dora Yarn Mill Co., Cherryville, N. C. He succeeds Jack Dale, who resigned.

E. W. Blackwood has been named assistant to Charles S. Clegg, president and treasurer of Globe Mills Co., Mount Holly, N. C.

F. Stanley Hallett

F. Stanley Hallett has been appointed assistant to the vice-president of sales and in charge of sales promotion and advertising for Curtis & Marble Machine Co., Worcester, Mass. Mr. Hallett for the past eight and one-half years has been associated with Abbott Machine Co. Inc., Wilton, N. H., as salesman, advertising manager, public relations and property manager. Prior to that he was with Doremus & Co., Boston, Mass., advertising agency; The Lavin Co., Boston advertising agency; and Bird & Son Inc., East Walpole, Mass. A native of Newton, Mass., he is a grandson of F. E. Stanley, inventor of the Stanley Steamer automobile.

Erick I. Hoegberg has joined American Viscose Corp. as head of its technical infor-

mation group. His headquarters will be at the corporation's research center at Marcus Hook, Pa. The author of numerous papers in his field, Mr. Hoegberg was formerly a group leader of the library section for American Cyanamid Co. in Stamford, Conn.

William H. Burbury has joined Mooresville (N. C.) Mills, a member organization of Burlington Industries, in a styling and fabric development capacity. The newly-created position is part of Mooresville's currently expanded emphasis on styling of its cotton apparel fabrics. Mr. Burbury was formerly with Reeves Bros. as a styler. Prior to that he was with Dan River Mills, Danville, Va. A native of Sparta, Tenn., he is a graduate of N. C. State College School of Textiles. He will make his headquarters at Mooresville's sales offices in New York City.

Carl O. Hedner, sales executive of The Yale & Towne Mfg. Co. for the past 33 years and sales manager of hoisting equipment since 1931, has been named assistant general sales manager of the company's materials handling division. He joined Yale in 1923 when both the materials handling and lock and hardware manufacturing activities were centered in Stamford, Conn. Four years later he became Southeastern district manager of both hoist and industrial truck sales. In 1928 he became assistant to the manager of hoisting equipment sales and three years later was promoted to manager of the hoisting department when the materials handling division was moved to Philadelphia, Pa.

Harold L. Hansen has been elected vice-president of Sterling Drug Inc. in charge of the Hilton-Davis Chemical Co. Division to succeed the late James F. Thompson. Chairman of Sterling's quality control committee since 1947, Dr. Hansen has been associated with the company 14 years. During this period he has been intimately identified with chemical manufacture, as well as product control. Prior to joining Sterling he was assistant professor of chemistry at Northwestern University Dental School.

Marvin R. Cross, president of Greenwood Mills Inc., New York City, has been elected chairman of the board of The Association of Cotton Textile Merchants of New York. W. Ray Bell was re-elected president; Stanley Phillips of Cannon Mills Inc. was chosen vice-president; Ridley Watts of Spartan Mills Inc. was re-elected treasurer; John L. Severance was named secretary; and Edwin F. Vandervoort, assistant treasurer.

Frank Ross, assistant to the vice-president in charge of sales of E. F. Houghton & Co., Philadelphia, Pa., has been elected to the firm's board of directors. Mr. Ross joined Houghton in 1942, and has been at his present post since July 1949.

Fred M. Wiley has been elected vice-president in charge of production for all of the plants of The Abney Mills. Mr. Wiley had been assistant vice-president in charge of production since last June. He became associated with Abney in 1942. He began work at Grendel Mill, Greenwood, S. C., as an overhauler in the weave room and was shortly thereafter transferred to Belton Mill, where he was assistant overseer of weaving. In 1951, he was promoted to superintendent of Poinsett Mill in Greenville and a short time later was transferred to Greenwood as superintendent of Grendel. In 1952, he was promoted to general superintendent of the Grendel and Panola Plants. From 1954 until his promotion to assistant vice-president in charge of production, he served as general manager of the Grendel, Panola and Poinsett Plants. . . . Carl R. Harris, vice-president of Erwin Mills Inc., Durham, N. C., has been appointed by Secretary of Labor James P. Mitchell to the Advisory Committee on Young Workers of the Bureau of Labor Standards.


Geo. W. Parkinson

George W. Parkinson of Greenville, S. C., has been named sales representative in South Carolina for Product Sales Inc. of Whitman, Mass. He succeeds Dudley M. Dunlop, who has resigned because of ill health. Mr. Parkinson has been with Product Sales four years as service representative. He was formerly with the service department of H & B American Machine Co., Pawtucket, R. I.

N. S. W. Vanderhoef, vice-president and director of Turner Halsey Co. Inc., has announced that he is retiring from the company, but will continue as consultant to its export division. Mr. Vanderhoef joined Turner Halsey in 1916. In 1928 the company formed an export subsidiary and he was made vice-president and treasurer-director. Later he was named president of the division.

W. C. (Bill) Lynch of Travelers Rest, S. C., has been appointed sales representative for Chemical Processing Co., Charlotte, N. C. Mr. Lynch will cover South Carolina, Georgia and Alabama for the company.


Daniel H. Lipman

Daniel H. Lipman, vice-president and general sales manager of Stein, Hall & Co. Inc., has been elected to the firm's board of directors. Mr. Lipman joined Stein, Hall in 1938. He was appointed assistant manager of the New York sales branch in 1947, and was named branch manager in 1948. In 1951, he was named assistant general sales manager for the entire company. He was elected a vice-president in 1952 and at the same time was made sales manager.

Ward A. Robinson, sales manager of Nylaclad & Plamenco Division, Plastic Mold & Engineering Co., Providence, R. I., has been granted a leave of absence due to illness. . . . James Beattie has been appointed production manager and Edythe Sperry, sales promotion manager.

In a series of organizational changes at Dixon Corp., Bristol, R. I., Robert Rulon Miller, former vice-president, has assumed

the presidency and will be in full control of the company and its affairs. William R. Potter, moving from his position as sales manager to the vice-presidency, will broaden his activities in accordance with the demands of his new post. John A. Crowe, recently in charge of a program of diversification and new product development for a nationally prominent manufacturer, joins Dixon as the new sales manager. Previously, Mr. Crowe had served as general sales manager of The Rex Corp., plastics manufacturer.

John A. England Jr.

John A. England Jr. of Boston, Mass., has been elected assistant secretary of the Saco-Lowell Shops. Mr. England joined the firm as an accountant in 1949 following graduation from Boston University. Following some six years as an accountant, he was advanced to the position of assistant to the treasurer, an office he continues to hold in addition to his new post. . . . Charles E. Daniel, board chairman of Daniel Construction Co., Greenville, S. C., has been named a director of Saco-Lowell.

George L. Brown has been named to the newly-created post of vice-president of purchasing for F. C. Huyck & Sons, Rensselaer, N. Y. Mr. Brown joined the company in 1920 as chief draftsman. He became assistant plant engineer in 1922, purchasing agent in 1934 and director of purchases in 1953, which position he has held to date. As vice-president for purchasing, he will be in charge of this operation for all American divisions of the company.

W. C. Peterson has been named manager of the Birmingham, Ala., office of The Bristol Co., Waterbury, Conn. Mr. Peterson, who for the past ten years has been with Bristol's New York sales force, succeeds L. B. Lumpkin, who has been transferred to the company's Pittsburgh, Pa., office.

J. W. Nabors has been named overseer of carding and spinning for Linway Mfg. Co. (formerly Washington Mfg. Co.), Tennille, Ga. Mr. Nabors recently resigned from a similar position with Hyde Park Mills Inc., Covington, Tenn.

John Deery has been elected vice-president of Fletcher Works Inc., Philadelphia, Pa. Mr. Deery, president of the Brinton Foundry, Philadelphia, will be in charge of the newly-created foundry division of Fletcher. Mr. Deery will operate the foundry as a completely separate division of Fletcher. It will be known as Fletcher Foundry. Jack Thompson remains as foundry superintendent and will continue in charge of operations.

Robert H. King of Fort Mill, S. C., has been named assistant superintendent of the Gayle Plant, Springs Cotton Mills, Chester, S. C.

Carl W. Shattuck, vice-president in charge of the textile machinery division of McKiernan-Terry Corp., Harrison, N. J., has been elected first vice-president of the com-

pany. Mr. Shattuck has been with the company since 1926. . . . Robert M. Fortune, in charge of the roll division serving the textile industry, has also been named a vice-president.

S. J. Craig, superintendent of Hatch Mill Corp., Columbus, N. C., a subsidiary of Deering, Milliken & Co., has been advanced to plant manager. Mr. Craig is a graduate of Clemson College. He joined Deering, Milliken in February 1946 and was located at Abbeville (S. C.) Mills Corp. as a chemist prior to joining Excelsior Mills, Union, S. C., where he worked for three and one-half years. A promotion in September 1950 carried him to Columbus as superintendent of Hatch Mill Corp.

A. B. Harris Jr. has been named manager of the nylon sales department of American Enka Corp. Mr. Harris was formerly nylon sales product engineer for the company.

Odis E. Little, superintendent of the Monaghan Plant of J. P. Stevens & Co. Inc., has been elected president of the Greenville, S. C., Textile Club. Mr. Little succeeds J. M. Snoddy Jr., superintendent of Mills Mill, a Greenville subsidiary of Reeves Bros. Inc. Other officers include Earl Stall Jr., Florence Division, Cone Mills Corp., vice-president; D. W. Stevenson, Greenville public schools, secretary-treasurer; and Harry Chapman, Parker High School, assistant secretary-treasurer.

Kenneth S. Hunt

Kenneth S. Hunt has been appointed sales representative for the Southern territory of the Metlon Corp. Mr. Hunt will work out of the office of the Bennett C. Plowden Co. in Griffin, Ga., and will cover Georgia, Alabama, Mississippi, Texas, Florida and Tennessee. A graduate of Mercer University and the Georgia Institute of Technology, Mr. Hunt spent five and one-half years with the Air Force prior to joining Plowden.

C. E. Anderson, superintendent of Excelsior Mills, Union, S. C., a subsidiary of Deering, Milliken & Co., has been promoted to plant manager. Mr. Anderson, a graduate of Clemson College, joined Deering, Milliken in 1946, and saw service at Judson Mills, Greenville, S. C., and Monarch Mills, Union, S. C., before being named superintendent of Excelsior in December 1952.

Robert S. Brice has been elected president, treasurer and general manager of E. E. Smith & Sons, Gastonia, N. C. Mr. Brice, who had been executive vice-president and general manager, was also named a director. Other officers of the company are Mrs. Alton B. Smith, chairman; Thomas R. Payne, secretary; William Wilson, assistant secretary; and Nancy K. White, assistant treasurer.

Charles N. Lindsey has joined the textile manufacturing division of Burkart-Schier Chemical Co., Chattanooga, Tenn., in a sales and service capacity. Mr. Lindsey, formerly with Pittsburgh Coke & Chemical Co., will cover parts of North Carolina, South Carolina and Georgia.

Alester G. Furman III of Alester G. Furman Co., Greenville, S. C., investment company, has been named president of the United Fund of Greenville County. . . . R. D. Sellers, president and treasurer of Southern Bleachery & Print Works Inc., Taylors, was elected a vice-president.

William C. Grant has been appointed operations manager in charge of all terminals for McLean Trucking Co., which maintains its headquarters in Winston-Salem, N. C. Mr. Grant was previously Southern operations manager for the company. During his eight years with McLean, he has headed the cost section of the accounting department and has been district operations manager in Atlanta, Ga. . . . Amory Mellen has been named assistant to the vice-president for operations. Mr. Mellen has been with McLean since 1951. He was previously manager of the McLean terminal in Winston-Salem.

Joseph C. King has been appointed technical director of the Southern division of Metro-Atlantic Inc. Mr. King, formerly research director for the Fairforest Co. and assistant director of research with the Graniteville Co., joined Metro-Atlantic Jan. 1.

The company's main plant and offices are in Centredale, R. I., with offices and warehouses in Greenville, S. C.

Harry B. Goldsmith has retired as director and treasurer of Hess, Goldsmith & Co. after 59 years with the firm. Seventy-eight years old, he joined the company in 1896. He had been treasurer since 1922 when the firm, originally a partnership, was incorporated. His son, Harry P. Goldsmith, is secretary of the company.

Herbert F. Schiefer of the National Bureau of Standards, Washington, D. C., has been awarded a gold medal by the Commerce Department for outstanding contributions to textile science and technology, particularly studies of the engineering properties of fibers and fabrics. He was one of a number of the department's employees cited for "outstanding contributions to the public service, the nation or humanity."

Ned Cooper has been named overseer of the cloth room at the White Oak Plant of Cone Mills Corp., Greensboro, N. C. Mr. Cooper was formerly overseer of the cloth room at the company's Edna Plant, Reidsville, N. C.

Hugh S. Kimball has been appointed sales manager of The Cameron & Barkley Co., Southeastern distributor of mill supplies, Charleston, S. C. Mr. Kimball, a graduate of The Citadel in Charleston, joined Cameron & Barkley in 1941 as a salesman. He will make his headquarters at the company's Jacksonville, Fla., branch.

George L. Ogdin Jr. has been named general sales manager of the Fulton Sylphon Division, Robertshaw-Fulton Controls Co., Knoxville, Tenn. Joining the company in 1940, Mr. Ogdin held various positions at Knoxville until 1944, when he was transferred to the firm's Detroit, Mich., sales office. In 1948 he became Detroit district sales manager. Returning to Knoxville in 1953, he was appointed assistant general sales manager.

OBITUARIES

Lewis C. Briggs III, 47, project director for Mead Carney International Corp., management consultants, died in Germany Feb. 10. Mr. Briggs had been associated with the textile industry for many years as foreign sales manager for Saco-Lowell Shops, Boston, Mass., as president of the Allen Beam Co., New Bedford, Mass., and as sales manager of U S Bobbin & Shuttle Co., Lawrence, Mass. Surviving are his widow, two sons and a brother.

John James Cooper, 72, textile engineer with Saco-Lowell Shops, died recently in Gastonia, N. C. His widow, a daughter and a son survive.

James Ellsworth East, industrial representative for the Sherwin-Williams Paint Co., Charlotte, N. C., died Feb. 29 in Charlotte. Mr. East is survived by his widow, two daughters and a son.

Ralph Bell Fuller, 82, one-time secretary of Golden Belt Mfg. Co., Durham, N. C., died recently in Durham. Mr. Fuller had been retired for a number of years. Survivors include his widow, two sons and two daughters.

John T. Linder, 70, assistant superintendent of Macanal Mills, Salisbury, N. C., died recently in Salisbury. Mr. Linder had been in the textile business most of his life. He is survived by his widow, three sons, three daughters, a stepson and a brother.

Henry Bunyan Miller, retired manager of Consolidated Textile Co. Inc., Lynchburg, Va., died Feb. 17 at his home in Lynchburg. Mr. Miller was formerly superintendent of the old American Spinning Co., Greenville, S. C. Prior to that he had been superintendent of Southern Brighton Mills, Rome, Ga., and Pee Dee Mills, Rockingham, N. C. A native of Newberry, S. C., he is survived by his widow, two daughters, a son, a sister and two brothers.

Lewis S. Munson, 82, retired chemist formerly with E. I. du Pont de Nemours & Co. Inc., died March 8 in Wilmington, Del. Mr. Munson was one of the small group of American chemists and engineers who developed the American synthetic dyestuff industry after the outbreak of World War I cut off the German supply of dyes. Surviving are his widow, three sons and a sister.

J. Warren Nichols, 69, former secretary-treasurer of the Reece Corp., Waltham, Mass., died Feb. 22 in Quincy, Mass. Mr. Nichols retired from Reece about two years ago. His widow and a son survive.

MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

MARION, N. C.—Marion Mfg. Co. now has under construction a 10,000 square-foot warehouse, completion of which is scheduled about June 1. The firm also plans to install 18 additional frames of Gwaltney spinning. This constitutes 5,000 spindles.

DALLAS, N. C.—A group of industrialists headed by Ben R. Rudisill, president of Carlton Yarn Mills Inc., Cherryville, N. C., has taken an option on the former Morowebb Mill property here. The property, now owned by Walker Engineering Co. of Dallas, a firm which specializes in rebuilt spinning frames and other textile equipment, has been idle for about two years and is empty of all machinery. Acquisition is being held up pending a study of the title involved, it is reported. Speculation is that if the sale goes through the plant will be reactivated.

LITTLE ROCK, ARK. — Chicopee Mfg. Corp. of New Brunswick, N. J., has purchased the fabrics division, here, of Visking Corp. The plant, completed in 1947, manufactures plastic-bonded, non-woven fabric. Chicopee operates plants at Gainesville, Cornelia, Buford and Athens, Ga., and Walhalla, S. C.

LINCOLNTON, N. C.—Rhodes-Rhyne Mfg. Co., here, now has an expansion program under way that will include the construction of a 20,000 square-foot addition to the plant. New equipment to be added includes cleaning equipment, 56 Draper Model XP-2 90-inch looms and new spinning equipment. The plant recently rearranged its opening room for greater efficiency.

TRYON, N. C.—Southern Mercerizing Co. Inc., here, has purchased the unoccupied Kilburn Mill and will transfer its operations to the new property some time this Summer. The new quarters will provide some 60,000 square feet of floor space, compared with Southern's present plant with 39,000 square feet. The present plant will be sold, Southern reports.

SOUTHERN PINES, N. C.—Botany Mills of Newark, N. J., has sold an 80-acre tract near the Southern Pines Country Club and golf course to a group of Aberdeen, N. C., businessmen for real estate development. Botany bought the land about 14 years ago with the idea of building a modern plant in which to move from Newark.

ROLLING FORK, MISS.—City officials here report they have secured commitments from executives of the Columbia Narrow Fabric Co. of Shannock, R. I., for location of a plant here to make elastics. The plant would employ about 100 persons with an annual payroll of about $275,000, it is said.

BURLINGTON, N. C.—Burlington Industries has exercised its option to purchase approximately 25 acres on Highway 49 one-fourth of a mile south of Burlington's city limits. There are no buildings on the property now, and the company's plans for the site have not been announced. The site is conveniently located and easily accessible.

BURLINGTON, N. C.—Burlington Industries is discontinuing throwing operations at the local Whitehead Plant of Plaid Mills, here, in order to integrate the production at other Burlington plants where it is most needed. Some 40 employees, most of them women, will be affected by the change.

KNOXVILLE, TENN. — Brookside Mills Inc., here, which reportedly has been operating at a loss for some months with employment declining steadily, will continue in operation. Employees of the plant have agreed to take a temporary five per cent cut

in pay in an effort to get the plant back in to profitable production. The plant in recent months has installed a considerable amount of new equipment, which now promises to permit the plant to operate competitively. The normal work force of 1,050 is presently down to about 150 persons.

TALBOTTON, GA.—Georgia Webbing and Tape Corp. of Columbus, Ga., has begun construction here on a manufacturing plant to employ 40 persons initially, with a weekly payroll of $2,200. The Talbotton Industrial Commission Inc. has voted to make necessary loans to assure construction of the plant. Local citizens have purchased stock in the commission to underwrite the plans.

COWPENS, S. C. — Linda Cotton Mill, here, idle for some months, will be converteded into a bonded cotton warehouse, Austin B. Warren of Westfield, Mass., new owner, has announced. Machinery in the print cloth plant will be disposed of to a buyer outside the country, it is said. Some $60,000 will be spent converting the property, which will provide some 90,000 square feet of storage space.

STONY POINT, N. C.—Worth Spinning Co., here, has announced that it will begin a $175,000 modernization program in the next 60 days. Plans call for replacement of six roving frames. Whitin changeovers have been ordered for the plant's 48 spinning frames, and Pneumafil will be added to all frames.

MARTINSBURG, W. VA.—Virginia Woolen Co. of Winchester, Va., has sold the old Berkeley Woolen Co. unit here to Jefferson Mfg. Co. for $102,000. The sale has been under negotiation several months.

JOANNA, S. C.—Spinning room modernization now under way at Joanna Cotton Mills Co. here will increase production to balance out with weaving capacity and permit six-day operation on the greater portion of the weave rooms, according to Walter Regnery, vice-president and general manager. The program is expected to be completed this year at a cost of about $700,000 —some $500,000 for changeover to Marquette roller bearing spindles and about $200,000 for pneumatic vacuum scavenger roll systems. About 15 per cent of the plant's total spindles have already been changed over to the roller bearing spindles, increasing production, it is said, about ten per cent. Installation of the pneumatic vacuum system will be completed soon on 15 per cent of the plant's equipment.

WASHINGTON, N. C. — The addition of four spinning frames is expected to increase production by 25 per cent at National Spinning Co. Inc., here. The firm has purchased four 240-spindle Saco-Lowell Gwaltney spinning frames with Reeves automatic wide range drive and auxiliary equipment. The plant processes wool and synthetics.

DURHAM, N. C.—Golden Belt Mfg. Co. here has placed an order with Saco-Lowell for equipment to be used in modernizing the plant's opening and picking room. The modernization program includes the installation of Saco-Lowell Model 15 openers with a pneumatic conveyor section, No. 12 lattice openers, and complete equipment for installing blending reserves on the plant's Saco-Lowell pickers. The installation is scheduled to begin the early part of June.

GREENVILLE, S. C.—H. C. Carter, vice-president of J. P. Stevens & Co. Inc. and general manager of the company's synthetics division, has announced that the current phase of the company's continuing modernization program at the Dunean Plant here will be completed about June or July. The project covers the installation of long draft, large package spinning and modernization of weaving equipment at a total cost of approximately $2,400,000.

ENOREE, S. C.—Riverdale Mills here recently completed an extensive modernization program which included a complete card room installation of Pneumastop for roving frames and the installation of Pneumafil central material recovery systems and Lint Free creels on all spinning frames, a total of over 37,500 spindles.

SUMMERVILLE, GA. — The Summerville Mfg. Co. has recently completed modernization of its entire spinning operation with the installation of the new Pneumafil Economizer unit system on over 14,000 spindles of new Whitin spinning.

WHITNEY, S. C.—The Pequot Division of Indian Head Mills Inc., here, is completing construction on a 4,000-square-foot addition, terminating a $200,000 expansion program. The addition is a one-story structure. The plant plans to install additional dyeing and finishing equipment which will include a wide high-speed tenter frame and finishing range, a wide sanforizing machine and calenders. Equipment is being installed to enable Pequot to produce various types of crease-resistant, washable, water-repellent and other types of novelty weaves and finishes. The plant will not only finish the fabrics for its brand sheets and pillow cases, but will do commission finishing for the converting trade. The expansion will require the addition of some 75 employees, it is reported.

COLUMBIANA, ALA.—Valley Mills, here, has placed an order for a new installation of 17 Saco-Lowell Gwaltney Model SG-3C spinning frames. The frames are 4½-gauge, 184 spindles each, with a creel arrangement to take the back stock directly from a can containing drawing sliver.

WAYCROSS, GA.—Scapa Dryers Inc., a British-Canadian firm formed here last year to produce cotton and asbestos felts, is installing heavy looms in its new million dollar plant here. The looms were shipped from Hindle, Son & Co. Ltd., Blackburn, England. Installation of the equipment is expected to take from two to three months, with production scheduled to get under way shortly thereafter.

MONROE, N. C.—Arel Mills Inc. is adding 64 looms to its plant here to increase production by 50 per cent. Construction has started on an addition to the plant which will house the added equipment. The addition will contain 9,500 square feet of floor space. The new looms will process the new Arnel fiber produced by Celanese Corp. of America, for lining purposes under the trade-name of Arello. An additional 30 employees will be required when the new addition is completed.

DURHAM, N. C.—Construction of the dyehouse addition for Erwin Mills Inc., here, has been completed. The addition has an area of 6,231 square feet on one floor. Daniel Construction Co. of Greenville, S. C., was general contractor.

SALISBURY, N. C.—Stockholders of North Carolina Finishing Co. will hold a special meeting March 30 to vote on a merger into Erlanger Mills Corp., which is incorporated at Wilmington, Del. The surviving firm would be known as Erlanger Mills Corp. Affiliated operations are Erlanger Mills Inc., at Lexington, N. C., and Alexander Mill, Forest City, N. C.

CONCORD, N. C.—Construction has begun on a two-story addition to Kerr Bleaching & Finishing Works Inc., here. The addition will contain 7,200 square feet of floor space and cost an estimated $120,000. The project is scheduled for completion in April.

GREENVILLE, S. C.—Modernization and construction projects costing more than $750,000 are under way at two plants of Woodside Mills. At the Haynsworth Plant, Anderson, S. C., an 18,000-square-foot warehouse for raw material storage is under construction at a cost of about $100,000. At the Greenville Plant, here, projects totaling $658,000 are under way. The plant's boilers have been replaced at a cost of $100,000. Whitin Machine Works' Axifeed and Axiflow equipment is being installed in the opening room at a cost of about $30,000. Fifty additional cards are being installed at a cost of $75,000. Spinning department changes will cost approximately $453,000. New improved creels are being placed on all warp and filling spinning. Extended draft system is being added to both warp and filling, with Whitin on the warp spinning, and Saco-Lowell on the filling spinning. Pneumafil, already in use on warp spinning, is being added to all filling frames.

RED SPRINGS, N. C.—Amerotron Corp. plans to transfer some equipment from North Carolina to mills in other states because of power rates. First in the movement will be the transfer of throwing equipment from the corporation's plant here. Robert L. Huffines, Amerotron president, has criticized Carolina Power & Light Co., Raleigh, N. C., for its high rates three times in the past several months. Amerotron plants in the area served by Carolina Power & Light Co. include those at Aberdeen, Red Springs, Robbins and Raeford. Amerotron has not disclosed where the local equipment will be transferred.

MURPHY, N. C.—The Duffy Silk Co., here, has been purchased by the four Hemmerich brothers of Denver, Pa. The plant will be known as The Hemmerich Corp. No changes in personnel are planned. Paul Hemmerich Jr., secretary of the corporation, will come to Murphy later to serve as manager.

1956 Spinner-Breeder Conference

TWO hundred cotton industry representatives attended the Cotton Spinner-Breeder Conference in Charlotte, N. C., on March 7 and 8, sponsored by the Delta Council Advisory Committee, Stoneville, Miss. The American Cotton Manufacturers Institute and the Combed Yarn Spinners Association were hosts at the meeting which was the 12th in the series of annual conferences aimed at the improvement and development of cottons to more nearly meet mill requirements.

Cotton men were welcomed at the meeting by A. K. Winget, Albemarle, N. C., president, American Cotton Manufacturers Institute, and C. C. Dawson, Gastonia, N. C., executive vice-president, Combed Yarn Spinners Association. George R. Walker, vice-president, Stoneville (Miss.) Pedigreed Seed Co., presided at the opening session.

T. D. Truluck, manager of the cotton department of Deering Milliken Service Corp., Union, S. C., and Dr. Thomas Kerr, Agricultural Research Service, U.S.D.A., Beltsville, Md., set the pace for the opening session. Their papers were discussed from spinners' and breeders' viewpoints by Dr. C. R. Sayre, president, Delta and Pine Land Co., Scott, Miss.; John Elting, director of research, Kendall Mills, Paw Creek, N. C.; Earl Heard, vice-president, West Point (Ga.) Mfg. Co., and Dr. J. Winston Neely, Coker's Pedigreed Seed Co., Hartsville, S. C.

Competitive Properties

Speaking on "Cotton Properties Needed to Meet Competition," Mr. Truluck listed areas in which cotton should be improved to better its competitive position. Citing the price advantage of rayon over cotton, he said that cotton had much to gain from a lower price, but that most of the gains would be of a long-range nature. "What is needed is a price policy founded upon steadily declining cost of production, which will make both our customers and competitors believe that in future years the price of U. S. cotton is likely to trend lower as compared with the price of competing materials," Mr. Truluck stated. Other factors listed by Mr. Truluck included longer staples, uniformity of staple length and fiber maturity, strength, fewer neps, precautions to eliminate foreign matter and contamination of lint cotton, improved packaging of the cotton bale, better draping qualities, luster and preservation of the qualities of cotton in harvesting and ginning procedures. Dr. Kerr gave a summary of cotton breeding work being carried on in the U. S.

Other highlights of the two-day meeting included a discussion of the significance of fiber properties and the need for developments in the field of instrumentation by Dr. Kenneth L. Hertel, director, Fiber Research Laboratory, University of Tennessee, Knoxville; new developments in textile machinery and influences on raw cotton selection by Elmer McVey, vice-president, Saco-Lowell Shops, Boston, Mass., and J. H. Bolton Jr., assistant treasurer, Whitin Machine Works, Whitinsville, Mass.; qualities of cotton consumed in the U. S. by E. J. Overby, director, Cotton Division, Agricultural Marketing Service, U.S.D.A.; and an analysis of the 1955 crop by J. M. Cook, cotton technologist in charge of the Clemson (S. C.) Cotton Laboratory. Dr. Burt Johnson, National Cotton Council, led a discussion of Dr. Hertel's paper, and Malcolm E. Campbell, dean, North Carolina State College School of Textiles, presided at the session on March 8.

Fiber Research Needed

Dr. Hertel called for increased research toward the development of instruments to measure fiber properties. "Cotton is now facing genuine competition," Dr. Hertel said. "The fact that it is still in the running is sound evidence that it still has some superior qualities. Its consumption is not increasing as rapidly as some of the man-made fibers but, in a sense, it has held its ground without research. Research is just getting started and may appear to be confusing rather than helpful, but the problems are complex and need to be broken down into simpler manageable ones." Dr. Hertel also pointed out that the skilled senses of sight and touch in the cotton industry have accomplished wonderful works of art but these senses must be aided by scientific knowledge and instruments if cotton is to have its rightful chance to succeed in competition with man's constantly improving efforts based primarily in the scientific laboratory. *(Editor's Note:* See full paper, Pages 110-112).

Quality Changes

Tracing the changing qualities of cotton consumed in the U. S. from 1930 through 1954, Mr. Overby pointed out that there has been a fairly steady improvement in average staple length although the production and use of long staple upland cotton has decreased. "Looking at the supply for the last 30 years, we find that cotton shorter than one inch has declined from three-fourths of the total 30 years ago to about one-fourth presently. On the other hand, supplies of staples one inch through 1 3/32 inches have increased from about one-fourth of the crop to nearly three-fourths," Mr. Overby said. He also said that U.S.D.A. records beginning in 1928 have shown a decline in the disappearance of good middling and strict middling from more than seven million bales in 1928-29 or about one-half of the total to only 1½ million or one-tenth of the crop in recent years. He said that strict low middling is now the average grade of the crop and the production and use of low middling has increased.

Improvements Seen

Mr. Overby pointed out that breeders, farmers, merchants and spinners have taken great strides in increasing efficiency and that the output per man throughout the industry has kept pace with the upward rate prevailing in our economy generally. He said that cotton available for consumption by domestic mills is likely to improve more rapidly in the future than it has in the past. "Mills are in a better position than ever to specify their quality requirements in terms that the breeder, the farmer and the merchants understand and can measure. Mills are probably more conscious of their

requirements and more specific in their demands than ever before. These demands are being met by the progress in new techniques of both production and marketing. I think that we have every reason to believe that the next 25 years will see more startling developments than were produced by the last generation. The future for cotton lies in the alert and vigorous application of the findings of science and I believe the cotton industry is in a much better position than ever before to make such application," Mr. Overby concluded.

The group toured the Firestone Textiles plant in Gastonia on the afternoon of March 7 and were guests of the Combed Yarn Spinners Association at a social hour at the Gaston Country Club.

Significance Of Fiber Properties And The Need For Progress In The Field Of Instrumentation

By KENNETH L. HERTEL, Director, Fiber Research Laboratory, University of Tennessee, Knoxville

The skilled senses of sight and touch in the cotton industry have accomplished works of art, but these senses must be aided by scientific knowledge and instruments if cotton is to keep pace in the fiber market. Dr. Hertel thus puts in his plea for continuing progress in cotton technology in an address before the recent Spinner-Breeder Conference at Charlotte, N. C.

NO textile discussion is complete unless we talk about quality. And what is quality? A textile fabric has quality if the consumer wants it more than a competing fabric. Quality characteristics are those that enhance the value of fabric. For the most part quality characteristics can be expressed as those physical characteristics resulting directly from fiber properties, those resulting from the arrangement of the fibers, or those resulting from the finishes or dyes added. In the two latter cases the resulting properties are often greatly influenced by the initial fiber properties. Quality, therefore, is ultimately determined largely by the properties of the fibers. What are these properties? How are they controlled? Let us consider the second question first.

Cotton fiber properties depend partly upon inheritance and partly upon environment. If one adds the condition that fibers must be commercially available at a competitive price, the actual fiber properties and their ranges are further restricted. It is within this restricted region that the breeder, producer, and mill must maneuver to their most favorable position. So long as competition remained largely within the cotton industry it consisted of the art and skill of one cotton man pitted against that of another. When the man-made fibers entered the field new properties were involved and wider and more easily controlled ranges of properties were available. These properties were measured with instruments to greater precision and controlled to much narrower limits than in the cotton industry. A little later we shall discuss the advantages or disadvantages of the narrowed limits. For the moment let us note that the man-made fibers whose properties are controlled objectively and more precisely with instruments give real competition to cotton which has been a better fiber in many ways but whose advantageous properties are not thoroughly understood and few of the properties are routinely measured against objective standards.

Primary Properties

Next let us consider the question of which of the fiber properties are significant. Most would agree that length, fineness and strength are of primary importance. At least the trade has been evaluating staple length for a long time, is taking on fineness airs in a big way at the moment and is making some routine strength evaluations. Even if we do not know the precise importance of these properties, they must be of real monetary value to at least the most discriminating workers. The questions of why they are important are very challenging to the research worker. It might be profitable to examine some of these of significance in more detail.

Staple length is a property that has been given a numerical value for the longest time. How do we define staple length? Much scientific work using precision instruments has been directed toward this question. No simple scientific definition has resulted. The best answer is that the staple length is the evaluation given by a competent classer. There does not seem to be a scientific equal to the staple length. There are some first approximations such as the most probable fiber length, the upper quartile length, and the upper half mean length. None of these will withstand close scrutiny. These are, however, scientifically definable. There is another feature that confuses the scientific approach even more. Since staple length carries a monetary premium, a classer will modify his evaluation of a cotton if he judges that cotton to be inferior or superior in other qualities than length.

Staple length is confusing to those who try to learn what contribution fiber length makes to such a yarn property as single end or skein strength. The problem gets even more complex if other fiber properties that influence yarn strength are correlated with length such as fiber fineness, fiber strength, and the uniformity of fiber strength along the length of the fiber. Maybe this accounts for such diverse findings for the cause of yarn strength as Webb's conclusion that fiber length is the most influential of six fiber

properties in producing yarn strength; Wakeham gives much weight to single fiber elastic modulus and but very little to fiber strength; while Hertel and Craven find the correlation coefficient between ⅛-inch gauge fiber strength and yarn strength of 22s to be above 0.8, leaving little room for much contribution from other properties. Surely some of us must be confused and probably all are to some extent. If the so-called research workers are at such variance, what must be the state of mind of breeders and mill men? The research men just haven't come up with soundly substantiated answers yet. There isn't that undisputed evidence at hand that convinces, let us say, the 95 per cent. And how do we get such evidence? Invent scientific hypotheses, test them with laboratory research, then follow up with pilot plant testing of the modified hypotheses under controlled or precisely measured conditions using the necessary instrumentation.

Another fiber property that is presumably being measured is fineness. Here is a case where the industry just couldn't wait for the research investigations to be completed. It adopted a research tool, ran regression lines with a property it thought it would like to have measured and then insisted it was measuring that property. When inconsistencies became intolerable, a curvilinear regression was substituted and has become virtually a law of the land. The American Society for Testing Materials has ruled that the reading must not be labelled micrograms per inch, but has allowed it to be called an index. A further confusing feature is that this index is more closely related to what the industry calls maturity but no one happened to compare it with maturity and attach maturity labels to the readings. It might be suspected that the reason the index is so useful to the industry is that maturity is often the important property. Fineness and maturity are very closely related although they are separate and distinct properties. No wonder they are confused in an industry that takes scientific accuracy lightly. Much sound scientific evidence must be accumulated and interpreted before the roles of fineness and maturity are clarified and accepted. Again this calls for research with its attendant special instrumentation.

The third property often measured is fiber strength. There is little question that if one is interested in yarn strength he must consider the strength of the fibers that make up that yarn. In many mills, however, when it is necessary to increase yarn strength the first impulse is to blend more long staple. There is much evidence that says this remedy often works. The question is "Why?" Does this mean that fiber length alone increases yarn strength? The answer is "Yes, it should." The trouble is that when one asks how much it should increase yarn strength the amount is almost negligible especially for the average sized yarn. There must be some other property that is usually associated with length which is responsible for the increased yarn strength.

We do not have enough information to give a positive answer but we do have some interesting leads. At the risk of being misunderstood, I should like to present a possible or maybe a probable explanation but surely not a substantiated one. The property that one would naturally suspect is fiber strength. When, however, one examines the zero gauge or Pressley strength again there is some increase of strength with increase of length, but not enough to explain the expected increase in yarn strength. A more critical examination of yarn failure suggests that fibers in the yarn are not gripped to break over an extremely short distance but

rather to break at some point within a space of something like an eighth-inch. If now one compares the breaking strength of ⅛-inch gauge with that at zero gauge, one is shocked to find that it is only about half as strong for the medium staple cottons and about two thirds as strong for the better long staple cottons. This may not sound like an impressive difference but it is. It is equivalent to comparing a 75,000 lbs/in² cotton to one of a 100,000 lbs/in², and this with two cottons having the same zero gauge strength. There is another important difference in these two cottons. The more uniform cotton is going to elongate more uniformly over its entire length and hence will show a greater percent elongation. This is an additional property that is desirable. The increased elongation modifies the elastic modulus and may be the reason why Wakeham, as indicated earlier, attributes much importance to elastic modulus for producing yarn strength. In a similar way the increased spacing of weak places with increased fiber length might explain why Webb finds fiber length so important in producing yarn strength when used with zero gauge strength. Also we believe that the strength measured at about ⅛-inch gauge is a combination of what might be called the intrinsic fiber strength and the uniformity along the fiber and that this combination is approximately duplicated in the average yarn. The picture is modified for other than average yarns making both fineness and lengths more important for the fine counts. More research is required to determine the true story but in the end the three approaches will no doubt be reconciled and be recognized as imperfect groupings for the same underlying principles.

Secondary Fiber Properties

We have considered the three most obvious or at least the most commonly measured fiber properties. Assuming that these have been accurately measured, do these three different values give all the information about the fibers that is needed by the industry to process and market them? Or put in another way, do all bales having the same length, fineness and strength process alike and give the same ultimate product? The answer is "No."

It is not so easy to say what these additional properties are. Maturity must be one of them if the present so-called fineness measurement is not already measuring it confused with fineness. The confusion will remain until we adopt instrumentation that gives us two independent measure-

ments representing the size and the shape of the fiber cross section. The very intimate relationship between fineness and maturity itself makes for confusion of the two concepts. In order to learn whether fineness or maturity is correlated with nep formation and dyeability, the two properties must be separated in theory and in instrumentation.

Load and elongation is another pair of properties that are closely related. We are now measuring the tenacity or the load intensity at break. For various reasons we should be concerned with the amount of energy that the fiber will absorb before rupture. Since energy is the product of force and distance, the area under the load-elongation curve represents this energy. The curves for a given material such as cotton are very similar and hence the end point or the breaking load and elongation give comparative information almost as complete as the whole curve. The ratio of the breaking load to elongation should be highly correlated with elastic modulus and the product highly correlated with energy absorption.

Fiber elongation has been studied in connection with spinning performance and yarn properties and the results reported at the Cotton Research Clinic. Most of the findings were negative. Fiber elongation contributes little to yarn strength but is strongly correlated with yarn elongation. The correlation of zero gauge strength with 1/8-inch gauge strength is improved by the inclusion of elongation. If then zero gauge strength is compared with yarn strength the addition of fiber elongation would appear to improve the prediction of yarn strength. In reality it is only partially correcting for the use of the zero gauge strength instead of the single, more effective 1/8-inch gauge strength.

Fiber elongation should be important in some of the processing operations such as weaving and in fabric properties such as resistance to abrasion and to tear. Research is needed in this area.

The uniformity of strength along a fiber might be considered a separate property and as such would appear to be very important if yarn strength and elongation are important. In the great bulk of our upland cottons the 1/8-inch gauge strength would be doubled if the fibers could be made uniform along their length. At the same time the breaking elongation would be greatly increased rather than decreased. If the high correlation between 1/8-inch gauge strength and yarn strength remained valid as it probably would the yarn strength would be doubled and at the same time made more elastic. Such an improvement would be miraculous and nature has enough variability that if we can develop the instruments with which to detect the uniformity and enhance it, future cotton yarn strength should be materially improved. Even now the use of 1/8-inch gauge strength as a criterion for selection will favor the linearly uniform cotton with the attendant greater elongation as well as those with higher intrinsic strength.

There must be still other unsuspected secondary properties that will be found to be just as important as the uniformity along the length of the fiber if we look hard enough through the eyes of research aided by the proper instrumentation. In addition to these presently unknown properties, there are such properties as dyeability, elastic modulus, packing modulus, friction, crimp and resilience that should be subjected to critical study. Those properties that turn out to be important should be evaluated with the aid of adequate instrumentation and those that are useless should be deleted from our thinking.

February Rayon And Acetate Shipments

February shipments of rayon and acetate yarn and staple by U. S. producers amounted to 105,900,000 pounds, according to the *Textile Organon,* statistical bulletin of the Textile Economics Bureau Inc. Domestic consumers received 104,200,000 pounds and the balance was exported. Shipments in the first two months of the year totaled 221,600,000 pounds, eight per cent above the corresponding 1955 period.

Regular+intermediate tenacity rayon yarn shipments amounted to 20,500,000 pounds, an increase of 13 per cent compared to January shipments. Most of the increase was shipped from stock, as production both months was nearly equal. High tenacity rayon yarn shipments in February amounted to 34,800,000 pounds, a decrease of four per cent from January. Here, too, shipments were about the same as production and there was little change in the stocks held by producers.

Acetate yarn shipments in February were down 34 per cent from the January total of 25,100,000 pounds. February shipments thus fell back to the typical level of the last six months of 1955, the *Organon* points out. The *Organon* notes that both the January acetate yarn and the February regular tenacity rayon yarn shipments were affected by price increases in the preceding month in each case. Rayon staple+tow shipments in February were 5.5 per cent below January, while the acetate staple+tow shipments were off by nine per cent.

The *Organon* compilation of rayon staple imports during 1955 reveals that a record total was attained last year. At the beginning of 1955, imports were at a somewhat lower level than at the end of 1954. But this trend was soon reversed and imports rose to a peak of 18,447,000 pounds during May, the highest month on record. Subsequently, imports of the fiber slowed down but the unusually high imports of the second and third quarter were enough to raise the annual total of 171,823,000 pounds or nearly three times the amount imported in 1954. The previous record year was 1950 when a total of 91,191,000 pounds came into the U. S. from abroad.

Western Germany, according to the *Organon,* was the largest supplier of rayon staple last year. Imports from that country during 1955 amounted to 35,885,000 pounds or 20.9 per cent of the total; this compared with 13.5 per cent of the total in 1954, and thus Germany replaced France as the leading supplier of foreign rayon staple to this country. The *Organon* notes that Italy sent about 12 times as much rayon staple here in 1955 as it did in the previous year to take fourth place in the list of suppliers. On the other hand Japan, the world's largest producer of rayon staple, sent only nominal amounts to the U. S. last year.

Imports of non-cellulosic staple during 1955 amounted to 317,000 pounds, about double the amount sent to the U. S. in 1954. Western Germany was the largest supplier, but four other countries increased their shipments here and one showed no change.

Production of tire cord and fabric of all types during the fourth quarter of 1955 totaled 130,000,000 pounds, two per cent less than output in the third quarter but 11 per cent above the 117,000,000 pounds produced in the fourth quarter of 1954. Rayon tire cord and fabric amounted to 102,000,000 pounds, virtually unchanged from the third quarter but 11 per cent over the 92,000,000 pounds pro-

duced in the fourth quarter of 1954. Output of nylon tire cord and fabric amounted to 13,000,000 pounds in the last quarter of 1955 compared with 12,000,000 pounds in the previous quarter and 9,000,000 pounds in the fourth quarter of 1954.

Fourth quarter output of cotton tire cord and fabric (exclusive of chafer) amounted to 3,000,000 pounds and this compares with 4,000,000 pounds in both the third quarter of 1955 and fourth quarter of 1954. Production of cotton chafer and similar fabric totaled 12,000,000 pounds, the same as in the fourth quarter of 1954 but slightly below the 13,000,000 pounds produced in each of the first three quarters of 1955.

All types of tire cord and fabric during the full year 1955 were produced to the extent of 523,000,000 pounds which compares with 414,000,000 pounds during 1954. Output thus returned to the approximate 1952-1953 level. Rayon tire cord and fabric output totaled 406,000,000 pounds in 1955, thus was up 25 per cent compared with the previous year. Nylon tire cord and fabric output at 50,000,000 pounds was up 67 per cent; output of cotton tire cord and fabric (exclusive of chafer) was 16,000,000 pounds, up 23 per cent; and cotton chafer fabric production at 51,000,000 pounds was up nine per cent.

The *Organon* analysis of cellulose consumption by the U. S. rayon and acetate producing industry shows that during 1955 a total of 634,500 short tons were consumed, 18 per cent more than was consumed in 1954 and a new record surpassing the previous high of 616,300 short tons consumed in 1951. Dissolving wood pulp accounted for 546,900 tons or 86 per cent of the total cellulose consumed, the comparable 1954 figure being 89 per cent. The balance of 87,600 tons or 14 per cent was refined cotton linters pulp. Compared to 1954, the wood pulp usage in 1955 increased by 69,600 tons or 14.5 per cent, while the linters pulp was up by 27,100 tons or 45 per cent.

An average of 1.061 pounds of cellulose was consumed in the output of each pound of viscose+cupra rayon yarn staple, tow and waste in 1955. This compares with an average of 1.055 pounds in 1954. The small increase last year, according to the *Organon,* was probably due to the fact that rayon yarn production, with its higher waste factor, increased proportionately more than the output of rayon staple and tow, which has a lower waste factor. Contrariwise, the proportionately larger use of high-alpha linters pulp in the production of high tenacity rayon last year tended to reduce the poundage of pulp needed to produce the final rayon product.

A total of 97,600 short tons of cellulose was used in the production of acetate yarn and staple in 1955, of which 77,700 tons or 80 per cent was dissolving wood pulp and 19,900 tons was purified cotton linters. During 1955 an average of 0.678 pounds of cellulose was consumed in the output of each pound of acetate, almost identical to the 0.679 pounds used in 1954. The much lower ratio of cellulose to finished product for acetate, as compared with rayon, reflects the fact that only about two-thirds of the acetate poundage is cellulose, the balance being the acetyl radical.

According to the *Organon* study of U. S. textile fiber consumption, a total of 6,671,300,000 pounds of cotton, wool, man-made fibers and silk was consumed by mills in 1955. This represents a gain of 11 per cent over 1954 and the highest post-World War II year on record except for 1950 and 1951; consumption in those years was at a level

of 6,824,000,000 pounds, due to the influence of the Korean conflict which induced greater military purchasing as well as civilian "scare buying."

All fibers shared in the increased activity during 1955 and gains over the previous year ranged from 6.5 per cent in the case of cotton to 31.5 per cent for the non-cellulosic man-made fibers. Cotton consumption amounted to 4,386,400,000 pounds and the non-cellulosic man-made fibers 431,600,000 pounds in 1955. Wool consumption at 427,100,000 pounds was up 9.5 per cent; silk 7,200,000 pounds, up 12.5 per cent; and rayon and acetate 1,419,000,000 pounds, up 23 per cent to establish the highest level on record. The 1955 consumption of the non-cellulosic man-made fibers was also the highest yearly total on record.

Man-made fiber consumption, which averaged 58,000,000 pounds a year in the 1920-1929 period, according to the *Organon,* rose to 1,850,600,000 pounds in 1955, or more than a 30-fold increase. Cotton usage, which averaged 3,057,000,000 pounds in the 1920-1929 period, rose to 4,386,400,000 pounds in 1955, a gain of 43.5 per cent. Wool consumption rose from 358,000,000 to 427,100,000 pounds over the period, an increase of 19.5 per cent. Silk deliveries on the other hand declined from an average of 57,000,000 pounds in the 1920s to 7,200,000 pounds in 1955, a decline of 87.5 per cent.

Waterproofing Finishes Sought For Cottons

The Agriculture Department has signed a $37,200 contract for Harris Research Laboratories, Washington, D. C., to develop water-impermeable, water vapor permeable cotton fabrics. The purpose of the research is to develop some kind of finishing treatment which would result in making ordinary cotton fabrics waterproof, but still permit them to "breathe."

The project is in contrast to a recent U.S.D.A. development—dense fabric—by which the agency developed waterproofing through fabric construction. The Department of Defense is said to be interested in the dense fabric development because of its possible use in tents, tarpaulins and clothing. J. P. Stevens & Co. has been given a large order for the fabric and the Navy is having Summer flight suits made from it. The Navy also intends to flameproof these suits, using recent U.S.D.A. flameproofing finishes.

Manufacture of the dense fabric requires a special loom attachment, U.S.D.A. officials point out, because it is a specialized construction and requires special ordering. If a finish could be developed which provides similar properties, special ordering to obtain a waterproof fabric which breathes would be eliminated, the department points out.

Research Scientists Needed By S.R.R.L.

The Southern Utilization Research Branch of the U.S. D.A. Agricultural Research Service, New Orleans, La., is seeking additional scientists for research. The current research program of the branch offers excellent opportunities for chemists, biochemists, physicists and cotton technologists interested in research. Vacancies currently exist at entrance salaries ranging from $3,670 to $7,570 a year. Persons interested should apply to the 8th Civil Service Region, 1114 Commerce Street, Dallas, Tex. For further information about career opportunities at the Southern Branch write to Dr. C. H. Fisher, 1100 Robert E. Lee Boulevard, New Orleans 19, La.

Tenn. Eastman Announces New Acrylic Fiber

Tennessee Eastman Co., a subsidiary of Eastman Kodak Co., has announced the development of a new modified acrylic fiber. The new fiber, which has been given the name Verel, is scheduled to go into commercial production in October of this year. According to R. L. Churchill, vice-president of the company, Verel is not an all-purpose fiber but is designed for special applications in selected fields. It will be produced in two, three, five and eight-denier staple. Price of the new fiber will be $1.10 a pound, it is said, compared with $1.18 a pound for Acrilan; $1.20 to $1.30 for Orlon; and $1.05 for Dynel. No production figures have been given except that the company expects to be in position to supply "quite a few million pounds."

General physical properties of the fiber, as pointed out by the company, include a tenacity of 2.5 to 2.8 grams per denier; elongation 33 to 35 per cent; elastic recovery 88 per cent at four per cent elongation and 55 per cent at ten per cent elongation; specific gravity 1.37 per cent; moisture regain 3.5 to four per cent; good wrinkle recovery and crease retention; and maximum ironing temperature of

300°F. Textile processing characteristics have been studied on various systems and for a variety of fabrics, the company reports. Blending with wool, viscose, cotton and Estron acetate has been evaluated, and it was stated the fiber lends itself "very well" to blending. It was also emphasized that the fiber has an inherent resistance to flammability.

Spinning tests on 100 per cent Verel fabrics reveal 40/1 cotton numbering system to be commercially practical while 27/1 to 34/1 are to be attained with three-denier staple of 1½-inch to 2½-inch lengths, it is said. Blends with 50 per cent Pima cotton show 68/1 as a "good spin limit" with 34/1 attainable in a mix with 50 per cent of 1½-denier two-inch viscose rayon. In blends with wool the fiber was said to elevate the spinning limit and to contribute to the hand of the fabric. It was said to contribute to enhancement of coarse and medium wools.

The fiber is dyeable on conventional equipment and with practical techniques, the company points out. It is not ordinarily necessary to bleach it but it reacts well with regularly used agents. Classes of dyes used are neutral dyeing, premetallized dyes such as used on wool, nylon and in some cases on acrylics, dispersed or acetate dyes, neutral dyeing acid dyes and in some instances the cationic or basic dyes.

A.C.M.I. To Limit Convention Registration

Because of the space problem, the board of directors of the American Cotton Manufacturers Institute has decided to limit registration at the annual A.C.M.I. convention at the Hollywood Beach Hotel, Hollywood, Fla., April 5-7. Registration for the convention will be limited to these classifications: textile mill executives, guests of textile executives, speakers and other special A.C.M.I. guests, and associate members of A.C.M.I.

Officials point out that attendance at the annual convention has grown in recent years to the point where few hotels can accommodate the convention, and facilities in these hotels are taxed to the limit to provide rooms for the membership. Reservations for the 1956 convention have already exhausted the Hollywood Beach Hotel's supply of rooms, and as far as is possible, the overflow will be accommodated at other hotels immediately nearby owned and operated by the Hollywood Beach Hotel.

Nylon Reinforcing For Cotton Garments

The wear life of denim work trousers can be increased 70 per cent by using 25 per cent nylon reinforcing in the warp of the trouser fabric, according to Du Pont's textile fibers department. Nylon's benefits in warp-faced denim constructions were demonstrated in a two-and-half year wear test of nylon-reinforced denim work trousers, the second in a series undertaken by Du Pont to explore the role of nylon as a reinforcing fiber in common cotton constructions.

Initiated with a group of 18 workmen, the test showed that 228 days was the average wear life of the nylon-reinforced trousers compared with an average of 134 days for conventional work trousers of the same weight and con-

struction worn as test controls. The evaluation was based on normal wearings by plumbers and welders with the wear test garments worn to the point of breakdown. The use of 25 per cent nylon in the warp of the denim gave an approximate total nylon content of 15 per cent and adds an estimated 25 to 30 per cent to the retail price of the garment. On a cost-performance basis the higher price would be more than offset by the increased wear life, Du Pont points out.

A previous wear test under rigorous conditions on an automobile assembly line evaluated the reinforcing properties of nylon in work gloves. Made of cotton flannel warp-faced twill fabric with 50 per cent nylon in the warp, the gloves showed a 2.2 wear-life advantage over all cotton gloves in fabric of the same weight and construction. The 50 per cent nylon content in the warp gave a total fabric content of approximately 17 per cent nylon. Knowledge of these results has led to widespread adoption of nylon-reinforced fabrics by work glove manufacturers, Du Pont reports. Other wear tests of nylon-reinforced cotton constructions are under way, with varying percentages of nylon and with varied dispositions of the man-made fiber in the construction.

Chemical Firm Offers Fire Training Courses

Fourteen different fire training courses, each lasting three days, will be conducted during 1956 on the ten-acre fire test field of Ansul Chemical Co. at Marinette, Wis. At the school, Ansul company instructors will teach the latest techniques in fire extinguishment to representatives of industry, government and the municipal fire-fighting services. The company-sponsored school, which has been in existence more than ten years, is believed to be the only one of its kind in the country.

As in the past, registration, which is on a first come, first served basis, will be limited to 25 men for each class to insure maximum benefit to those participating. Dates for the school follow: May 21-23; June 4-6, 11-13, 18-20, 25-27; July 9-11, 16-18, 23-25, 30-Aug. 1; Aug. 20-22, 27-29; Sept. 17-19, 24-26; and Oct. 8-10.

Students at all the Ansul schools will be taught to use hand, wheeled and large stationary fire equipment against flammable liquid and propane gas fires of all sizes and types so that they can return to their home plants better equipped to train fire brigade members and others in the latest fire-fighting techniques. The school schedule also calls for group discussions, motion picture film showings and a plant tour. There is no tuition fee. Additional information may be obtained by writing to the Director, Customer Training School, Ansul Chemical Co., Marinette, Wis.

Cotton Merchandising Clinic—April 13-14

The ninth annual Cotton Merchandising Clinic, sponsored by the Cotton Research Committee of Texas and the University of Texas, will be held April 13-14 at the Commodore Perry Hotel, Austin, Tex.

The opening session of the clinic is entitled "Uses of Fiber Laboratories in Merchandising Cotton," and will feature three papers. Otto Goedecke of Hallettsville, Tex., will speak on "The Needs of Requirements for a Cotton Fiber Laboratory Calibration and Check Program for Fineness and Strength for Cotton Merchandising Purposes." George Pfeiffenberger of the National Cotton Council, Memphis, Tenn., will discuss "Essential Features of a Sound Calibration and Check Program for Cotton Fiber Laboratories." W. F. Harris of the cotton economic research group, University of Texas, will speak on "Within and Between Variability for Length, Strength and Fineness of the Cotton Fiber."

The second session, titled "Procedures and Problems in Merchandising Cotton Scientifically Using All Its Fiber Properties," will also feature three papers. The first paper, "Basic Data Required in Merchandising Cotton Scientifically," will be given by Dr. Earl E. Berkley of Anderson, Clayton & Co. Inc., Houston, Tex. Joel F. Hembree of the cotton economic research group, University of Texas, will follow Dr. Berkley with a report on "Procedures and Techniques in Evaluating and Merchandising Cotton Scientifically." The third paper, "Some Neglected and Unexplored Phases of Cotton Fiber Measurement," will be that of T. H. Hopper, Southern Regional Research Laboratory, New Orleans, La.

The clinic will be concluded Saturday morning, April 14, with a third session on "Techniques of Evaluating and Merchandising Cotton." Leading off this session will be a paper on "Classification of Cotton In Relation to Tolerances

in Processing and Dyeing," by Merlin Birdsong, New Braunfels (Tex.) Textile Mills; Jack Towery, cotton research, Texas Technological College, Lubbock; and K. Lanse Turner, Cotton Research Committee of Texas, Lubbock. Charles B. Crandall of Burlington Mills, Cramerton, N. C., will follow with a paper on "How Equations and a Fiber Quality Index May Be Used in Cost and Quality Control." Dr. A. B. Cox of the University of Texas will close the clinic with a paper on "Economics of Pricing Cotton in Terms of All Its Measurable Values."

Teflon-Coated Glass Fibers

A new development in manufacture of glass yarn, in which a coating of Du Pont's Teflon is applied directly to the glass, has been announced by L. O. F. Glass Fibers Co., Toledo, Ohio. Previously glass yarn was braided and then coated with the Teflon. Now, with the Teflon coating applied directly to the glass before braiding, each strand of glass gets individual protection, in addition to the overall protection, the company points out.

Awards Made In Georgia Safety Contest

Fifty-five Georgia textile plants had accident frequency records lower than the national average for the textile manufacturing industry during 1955. This fact was announced at the presentation of awards to winners in the seventh annual Textile Safety Contest sponsored by the Cotton Manufacturers Association of Georgia. Winning mills were presented plaques at a recent Safety Clinic at the textile school at Georgia Institute of Technology. The clinic was sponsored jointly by the association's safety committee and personnel managers division. Z. B. Lane Jr., general manager, Clarkesville Mills, Clarkesville, and chairman of the safety committee, made the presentations following an address by J. S. Queener of E. I. du Pont de Nemours & Co., Wilmington, Del.

Participation in the 1955 contest by eligible Georgia mills was the largest—107 plants—in the contest's seven-year history, according to Frank L. Carter, secretary of the Georgia association. Sixteen plants worked a combined total of 8,840,057 man-hours without a lost-time accident or disabling injury. Winners by mill classification follow:

Group A (1 to 249 employees): Aldora Mills, Barnesville, first; The Hartwell Mills, Plant No. 1, Hartwell, second.

Group B (250 to 499): U. S. Rubber Co., Reid Mill, Hogansville, first; Dundee Mills Inc., Plant No. 5, Griffin, second.

Group C (500 to 749): Crompton-Highland Mills Inc., Griffin, first; Callaway Mills Co., Elm City Plant, LaGrange, second.

Group D (750 to 999): Dundee Mills Inc., Plant No. 1, Griffin, first; Coats & Clark Inc., Albany, second.

Group E (1,000 or more): Martha Mills Division, B. F. Goodrich Co., Silvertown, first; Exposition Cotton Mills Co., Atlanta, second.

In addition to these winners, nine other mills which had insufficient man-hours to win first or second place finished the contest with no lost-time accidents and won special awards. These were Dundee Mills Inc., Plant No. 3, Griffin; The American Thread Co., Newnan; Coats & Clark Inc., Acworth; Ames Textile Corp., Cleveland; Southern Mills

Inc., Atlanta; Bibb Mfg. Co., Welaunee Mill, Porterdale; Chicopee Mfg. Corp.; Lumite Division, Buford; Bibb Mfg. Co., Taylor Mill, Reynolds; and Bibb Mfg. Co., Star Plant, Macon.

Ga. Operating Executives To Meet April 21

The Textile Operating Executives of Georgia will hold their next discussion meeting on opening, picking, carding and spinning Saturday, April 21. The meeting will be held at the Hightower Textile Building, Georgia Institute of Technology, Atlanta, beginning at 9 a. m., according to Herman A. Dickert, secretary-treasurer of the group, and dean of Georgia Tech's A. French Textile School.

February Shipments Of Japanese Cloth, Yarn

Japanese export shipments of cotton cloth for February amounted to 119,201,000 square yards, or about 20,000,000 square yards more than in January, according to the Customs Division of the Japanese Finance Ministry. Export shipments of cotton yarn during the month totaled 3,262,000 pounds, about a million pounds more than the January figure. Total shipments during the first two months amounted to 219,650,000 square yards of cotton cloth, and 5,694,000 pounds of cotton yarn. Shipments for January and February of 1955 were 154,808,000 square yards and 3,211,000 pounds.

Swiss Industries Fair, April 14-24

Swiss textile machinery manufacturers will display their latest designs next month at the 40th Swiss Industries Fair. The event, to be held April 14-24 at Basel, Switzerland, is a national trade show that will include displays by members of all Swiss industries. Altogether some 2,300 exhibitors will take part in the show, which is expected to draw 700,000 visitors from all over the world. A wide variety of new developments in textile machinery will be introduced, covering all phases of textile processing.

Textile Division, A.I.E.E., Names Officers

The Textile Industry Subcommittee of the American Institute of Electrical Engineers, meeting March 1-2 at the Hightower Textile Building, Georgia Institute of Technology, Atlanta, elected J. D. McConnell as its chairman for the coming year. Mr. McConnell, plant engineer of Cone Mills Corp., Greensboro, N. C., succeeds Victor Sepavich of Crompton & Knowles Loom Works, Worcester, Mass. Other officers elected included R. B. Flowers of General Electric Co., Atlanta, vice-chairman; and R. H. Clark, Warner & Swasey Co., Cleveland, Ohio, secretary.

Whittier Named To Head Committee D-13

Prof. Benjamin L. Whittier of North Carolina State College School of Textiles, Raleigh, has been elected chairman of Committee D-13 on Textiles of the American Society for Testing Materials. Professor Whittier, who will serve two years, succeeds William D. Appel, chief of the textile section of the National Bureau of Standards, Washington, D. C.

Stewart J. Hayes, director of research for Ludlow (Mass.) Mfg. & Sales Co., was named first vice-chairman to succeed

Richard Kropf, vice-president and director of research at Belding, Heminway Co. Inc. Elected second vice-chairman was Prof. Kenneth L. Hertel, University of Tennessee, Knoxville, who replaces Charles W. Dorn, director of laboratory research for J. C. Penney Co. H. A. Ehrman was named to succeed William H. Whitcomb who retired from his post as secretary of Committee D-13 after more than 25 years of service.

A feature of the meeting, held at the Warwick Hotel, New York City, was the presentation of the Harold De Witt Smith Memorial Award to Dr. Arthur G. Scroggie, manager of the characterization laboratory, textile research and industrial products division, E. I. du Pont de Nemours & Co. Inc., Wilmington, Del. The award was the seventh presentation of the medal, which is sponsored by Fabric Research Laboratories, Dedham, Mass.

S.T.A. Divisional Meetings Scheduled

Preliminary plans for Spring divisional meetings of the Southern Textile Association have been announced by the association's divisional chairmen. The first of these meetings will be held by the Eastern Carolina Division, Saturday April 21, at the North Carolina State College School of Textiles, Raleigh, beginning at 9:45 a.m. E. H. Fuller, chairman of the division and superintendent of Roanoke Mills Co., Roanoke Rapids, N. C., will preside.

The South Carolina Division will hold its Spring meeting at Pelzer, S. C., Friday evening, April 27, beginning at 6:30 p.m. According to Joe N. Jenkins, chairman of the division and superintendent of the Upper Plant, Kendall Cotton Mills, Pelzer, S. C., the program will include a discussion on "Vacuum Scavenger System for Spinning Frames." Representatives from leading manufacturers of vacuum scavenger cleaning systems will address the meeting, and then participate in a question and answer discussion with a panel of four mill men experienced with the various systems.

The Piedmont Division of the association, headed by R. M. McCrary, superintendent of Carolinian Mills Inc., High Shoals, N. C., is scheduled to meet Saturday, May 5 at the Hotel Hickory, Hickory, N. C. The program will get under way at 10 a.m.

Charles H. Ward of Highland Cotton Mills, High Point, N. C., chairman of the Northern North Carolina-Virginia Division, has announced that his division will meet at the High Point Y.M.C.A. building on Saturday, May 12. The program is scheduled to get under way at 10 a.m.

Problems Of Dyeing Man-Made Fibers Cited

The science of dyeing must keep pace with the advances in high polymer chemistry and fiber physics, Dr. Victor S. Salvin of the Celanese Corp. of America told the North Carolina Section of the American Chemical Society at its recent meeting in Greensboro, N. C. The scientific approach to dyeing phenomena must be emphasized and encouraged, he said, in order to obtain improved and more economical dyeing processes for the newer fibers. Unfortunately for the dyer, he said, properties of synthetic fibers, such as "quick drying" and "dimensional stability to laundering and wrinkling," are devised from the same fiber characteristics which make the fiber difficult to dye.

These properties are hydrophobicity and close packing of

the high polymer chains, he noted. These result in a compact fiber of poor swelling properties in water. An understanding of high polymer properties, including changes taking place during the spinning process, is fundamental to dyeing of synthetic fibers, he declared.

The challenge of dyeing synthetic fibers is being met, he said, by use of basic knowledge of principles of dye absorption, synthesis of new dyes, and understanding of the structure of high polymers in their fiber form. On the 1956 scene, he said, four characteristics stand out: (1) the advent of modern fibers—Dynel, Orlon, Acrilan and Arnel cellulose triacetate; (2) the tendency toward suburban living and fabrics easy to care for; (3) the use of fiber blends for fabric performance; and (4) emphasis on color and styling effects to stimulate consumer demand.

The new man-made fibers, he pointed out, were brought into the market because they have performance qualities. Difficulties in dyeing, although recognized, have been a problem hopefully left to the dyer. In the future it is believed that fabric manufacturers will modify their fibers in order to get better dyeability, he said.

Bahnson To Offer Maintenance Classes

The Bahnson Co. has announced that its annual "Operating and Maintenance Engineers Classes" will be held during the week of April 9 and the week of April 16, at the Robert E. Lee Hotel in Winston-Salem, N. C.

The classes, open to all at no charge, are designed to assist operating personnel in becoming more familiar with their air conditioning systems, lint cleaning and broken end collection equipment. The company suggests that all firms operating or contemplating the purchase of such equipment should avail themselves of this opportunity to acquaint their personnel with the equipment's operation and maintenance. For complete information, write Dept. S, The Bahnson Co., Winston-Salem, N. C.

Piedmont A.A.T.C.C. To Meet April 7

The Piedmont Section of The American Association of Textile Chemists & Colorists will hold its Spring meeting at the Hotel Sir Walter in Raleigh, N. C., Saturday, April 7. The meeting will get under way at 9:30 a.m. with a meeting of the section's research committee. At 11 a.m. a student paper will be presented on "A Study of Some Effects of Reverse Twistyarn in Grease-Resistant Goods." An officer's luncheon is scheduled in the hotel's Manteo Room beginning at 12:30 p.m. Highlight of the meeting will be a technical session beginning at 2:30 p.m. The session will hear papers on "New Developments in Peroxide Bleaching," by J. L. Moore, E. I. du Pont de Nemours & Co. Inc.; and "Silicones in the Textile Industry," by Alton A. Cook, technical director, Arkansas Co. Inc., Newark, N. J. A social hour is scheduled for 6 p.m., followed by the annual banquet. Bertrand W. Hayward, president of the Philadelphia (Pa.) Textile Institute, will be guest speaker at the banquet. His topic will be "Textile Education and the Industry."

Draper Corp. Reports Increase In Earnings

Draper Corp. of Hopedale, Mass., reports consolidated net income for 1955 of $3,433,681 compared with net profit

in 1954 of $2,301,522. The figures include the earnings of the company's wholly-owned subsidiary, Jacquard Knitting Machine Co. Inc. Total sales in 1955 were said to be up 21 per cent over 1954.

Expenditures in the field of research and development continue to increase, the company reports. A major part of these expenditures during the last ten years has been spent in an attempt to produce a practical shuttleless loom that can compete successfully with the highly refined, conventional automatic fly-shuttle loom of today, it is pointed out. The shuttleless loom is still several years from the market, but the company feels that much progress was made during the past year.

Total consolidated profit for the year 1956 is expected to be slightly lower than for 1955 due to expected lower earnings by Jacquard, substantial non-recurring charges in connection with reorganization of recently-acquired Wildman Mfg. Co. of Norristown, Pa., materially increased expenditures on the shuttleless loom project and a reduction in non-operating income items. Providing the demand for looms, repairs and supplies continues to hold during the second half of the year, further improved earnings are expected from these operations, however.

Plant changes during the year just passed included a 42,000-square-foot addition to the company's East Spartanburg S. C., machine shop, and the relocation of the firm's shuttle blank processing plant at Swannanoa, N. C. The only major plant change now being considered for 1956 is a 20,000-square-foot addition to the company's warehouse in Spartanburg.

Seminar On Synthetic Latex Polymers

A technical seminar on synthetic latex polymers will be conducted for the Southern textile and paper industries on May 4 in Atlanta, Ga. Sponsored by the chemical division of the Goodyear Tire & Rubber Co., the seminar will be held at the Georgia Institute of Technology in the auditorium of the Hightower Textile Building.

Purpose of the seminar is to present to interested members of industry a survey of today's latex polymers. Main topics to be covered include the development, production, evaluation, properties and uses of synthetic latices. Keynote speaker at the meeting will be Herman R. Thies, general manager of the Goodyear chemical division. In opening the session, he will present a broad review showing the scope of this relatively new industry. Dr. J. D. D'Ianni, assistant to the vice-president in charge of research and development at Goodyear, will speak concerning the "Theoretical Consideration of Polymerization and Latex Characteristics."

Two papers will be delivered by Willard C. Smith, latex & adhesives section head for the chemical materials development department. "Properties of Latex Systems and Evaluation Procedures," and "The Influence of Latex Variance on Important Performance Characteristics" are the two topics being reviewed by Mr. Smith. Earl W. Scott, sales service representative for the chemical division's coatings department, will present "A Survey of Latex Applications and Potentials" in the various coating fields. The seminar will be concluded by Mr. Thies.

National Cotton Week, May 14-19

National Cotton Week, sponsored by the National Cotton Council, will be observed May 14-19. This year's observance, which will open the second quarter-century of the week as the annual merchandising event of the American cotton industry, will have as its theme "Pick Your Cottons Now—First Choice For You and Your Home—Naturally Fresher, Cooler, Smarter." The first National Cotton Week was sponsored by the former Cotton Textile Institute and was held June 1-6, 1931. For the past 15 years, the special week has been sponsored by the National Cotton Council, central organization of cotton growers, spinners, warehousemen, merchants, spinners and cottonseed crushers.

January Cotton System Spinning Activity

The Bureau of the Census, Department of Commerce, announces that, according to preliminary figures, 21,987 thousand cotton system spinning spindles were in place in the United States on Jan. 28. Of these 19,399 thousand were consuming cotton, 1,591 thousand were consuming other than cotton, and 997 thousand were reported idle. The total cotton system spinning spindle hours reported for the January 1956 period amounted to 10,315 million, an average of 515.8 million hours per working day (based on 20 days). During January cotton system spinning spindles operated at 146.6 per cent of capacity (based on 20 days of 16 hours) compared with 133.3 per cent for December (based on 25 days of 16 hours).

Synthetic Broad Woven Goods—4th Quarter

Production of synthetic and silk broad woven goods was 662 million linear yards during the fourth quarter 1955. This was seven per cent above the third quarter 1955 output and six per cent above that for the fourth quarter 1954. Production of rayon and acetate fabrics increased five per cent during the fourth quarter and was three per cent above the output for the same quarter last year. However, the production of 100 per cent filament rayon and/or acetate fabrics decreased two per cent during the fourth quarter 1955. Nylon fabric output was one per cent below that of the third quarter 1955 and eight per cent higher than the output for the fourth quarter last year.

Wool Consumption And Stocks—January 1956

The January rate of fiber consumption on the woolen and worsted systems was 17 per cent above the December rate and 16 per cent above that of January 1955, according to the Bureau of Census, U. S. Department of Commerce.

The weekly average raw wool consumption during January was 9,309 thousand pounds (scoured basis), or 17

per cent above the December level, and 18 per cent above that of January 1955. The rate of consumption of carpet class wool increased 16 per cent compared to the previous month and increased 26 per cent compared to January 1955, while consumption of apparel class wool was 17 per cent above the December level and 14 per cent above that of January of last year.

Consumption of fibers other than raw wool averaged 5,742 thousand pounds per week, or 17 per cent above the December average, and 12 per cent above the average of last year.

Woolen And Worsted Goods—4th Quarter 1955

Woolen and worsted fabric production during the fourth quarter of 1955 was 76.6 million finished linear yards, the Bureau of Census, U. S. Department of Commerce reports. This was one per cent above the third quarter 1955 output, and three per cent above the comparable period of 1954.

The output of women's and children's clothing fabrics at 38.1 million finished linear yards was three per cent below that of the previous period, but nine per cent above the output of the fourth quarter 1954. However, men's and boys' clothing fabric production increased four per cent during the fourth quarter to 33.6 million finished linear yards.

Output of non-apparel fabrics was 24 per cent above the previous quarter. Production of blanketing increased 27 per cent to approximately 2.7 million yards. Production of transportation upholstery and other non-apparel fabrics increased 24 per cent compared to the third quarter 1955 but decreased 44 per cent compared to the fourth quarter of the previous year.

I.C.C. Allows 6% Increase In Truck Rates

The Interstate Commerce Commission has approved a six per cent increase in motor carrier rates for the Central and Southern Motor Freight Tariff Association Inc. The association had applied for authority to boost rates by seven per cent, but revised the request after the I.C.C. limited the railroad's increase to six per cent. Two other large motor carrier tariff bureaus, Rocky Mountain Freight Bureau and Southern Motor Carriers Rate Conference, had scheduled seven per cent boosts to become effective March 10 and March 12, respectively, but at the last moment postponed the effective dates until March 21 and April 2. Three other large tariff bureaus had increased rates by about seven per cent previously. Southwest Motor Freight Bureau put its higher rates into effect March 7, as did Interstate Freight Carriers' Conference Inc. on the West Coast. Middlewest Motor Freight Bureau raised its rates Feb. 25.

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– TEXTILE INDUSTRY HAPPENINGS AS THIS ISSUE WENT TO PRESS –

Robert S. Pennock

Robert S. Pennock, formerly a general partner of L. M. Demarest & Associates, New York City, joined Universal Winding Co. March 6 as vice-president in charge of domestic sales, succeeding Winthrop S. Warren, who retired as of Jan. 1. Mr. Pennock is a graduate of Amherst College class of 1929 and has many years of sales and administrative experience which has brought him into close contact with both the electronic and textile industries. He has been with L. M. Demarest & Associates for the past ten years. During that period he has investigated fields of diversification for some well-known concerns. This work has gained for him a broad knowledge of textile problems.

G. Ray Jeffcoat has been named assistant superintendent of the Opp Cotton Mills Inc. and Micolas Cotton Mills Inc., both located in Opp, Ala. Mr. Jeffcoat has served the mills as engineer for a number of years. Taylor Benton, formerly master mechanic of both mills, has been named engineer.

Vincent A. Johnson has been named chief of the statistics division, National Association of Wool Manufacturers. Previously Mr. Johnson had been with Worumbo Mfg. Co., Lisbon Falls, Me., for 21 years, serving as office manager of its New York sales office. He succeeds William H. Briggs Jr., who resigned to join Monroe F. Dreher Inc., New York advertising agency, as director of marketing research. Mr. Briggs had been with N.A.W.M. since July 1952.

Ralph D. Padgett is on a three-week tour of Europe for Roberts Co. of Sanford, N. C., in his capacity as manager of sales-service. Mr. Padgett will visit Germany, Switzerland, Italy and France in connection with Roberts installations.

M. L. Brackett, general manager of Highland Park Mfg. Co., Charlotte, N. C., has been elected president of the North Charlotte Rotary Club.

C. L. Hall, manager and superintendent of Danville Yarn Mills, Bon Air, Ala., has been named a vice-president of the company. Other personnel changes announced recently by the firm include: Huey T. Green, who has been named overseer of the carding department, succeeding L. L. Lee, who has retired after 41 years with the company. . . . Clyde Roberson has been named overseer of the spinning department, succeeding the late James L. Holmes. . . . Henry Lytton has been promoted to foreman in charge of second shift spinning and Lecil Lipsey has been promoted to assistant foreman of second shift spinning. . . . Raymond Dennis has been promoted to foreman of second shift carding.

Robert C. Wilkie has resigned as head of the research department of Pacific Mills to join Ludlow Mfg. Co., Needham Heights, Mass., in research and development. Mr. Wilkie, who had been with the company since 1937, is the inventor of the Pacific converter. Patents on other inventions by him are held by the company in his name in 24 countries outside the U. S. These include an evenness tester for sliver and yarn and a raw stock waste and staple cutter.

Charles E. Garnett

Product Sales Inc., Whitman, Mass., announces the appointment of Charles E. Garnett as service representative, covering the states of Georgia, Alabama, Tennessee, Mississippi and Texas. He was formerly with the Tallassee Mills of Mt. Vernon-Woodbury Mills, Tallassee, Ala.

Jack T. Holt, director of purchases for Erwin Mills Inc., Durham, N. C., has been elected national vice-president of the newly-created Fifth District of the National Association of Purchasing Agents. He is a past national director of the association.

John Thomas Cashion, assistant general manager since 1951, has been named general manager of the Mayodan and Dobson, N. C., plants of Washington Mills Co. He succeeds William H. Bollin, who came to Mayodan in 1920 as superintendent of the mills and who has served successively as general superintendent, general manager and vice-president.

W. G. Hines is now superintendent of Sherrill Yarn Mills at Taylorsville, N. C.

Wayne M. Sherrill has been named superintendent of Moore Cotton Mill Co. at Lenoir, N. C. . . . H. M. Carnes continues as superintendent of Caldwell Cotton Mill Co., Hudson, N. C.

Paul W. Baker has been named special representative for the Charlotte, N. C., office of the Lassiter Corp., package designers and printers.

J. W. Insco, superintendent of the Carolina Mills Inc., No. 1 plant in Maiden, N. C., has been made superintendent of the No. 2 plant at Newton, N. C., succeeding L. T. Hefner, who has been named head of the Carolina Mills central laboratory at Maiden. . . . J. A. Yancey has been named superintendent of the No. 4 plant at Newton, succeeding H. S. Miller, resigned.

W. C. Cannon and J. H. Cannon have been elected to the positions of vice-president and assistant treasurer, and secretary, respectively, of Brown Mfg. Co. and Roberta Mfg. Co., Concord, N. C. The Messrs. Cannon, who are vice-presidents of Cannon Mills Co., will serve also on the Brown and Roberta boards. . . . James G. McCathern has been appointed general manager in charge of manufacturing at Brown and Roberta; C. F. Dorton continues as general superintendent.

John A. Moore has been moved from the engineering department of Foster Machine Co. at Westfield, Mass., to the Charlotte office of this company in a managerial capacity. Mr. Moore's experience in the textile industry started with Foster, but was broadened by a sojourn with American Enka Corp., where he was employed for some years before returning to Foster. He replaces Guy Williams, who has gone with American & Efird Mills Inc.

Herbert M. Bailey Jr. has joined Industrial Rayon Corp. in a sales capacity with the company's nylon staple fiber division. Mr. Bailey previously was sales manager of the Hartford Rayon Co. division of Bigelow-Sanford Carpet Co. He is a graduate of Brown University and the Rhode Island School of Design. He will be located at Industrial Rayon's sales offices at 500 Fifth Avenue, New York City.

Frank Anderson

Frank Anderson of Greensboro, N. C., has been appointed technical representative for Moretex Chemical Products Inc. in the North Carolina - Virginia area. For the past five years he was associated with Warwick Chemical Co. in various capacities.

W. A. Thomason Jr., president of Thomason Textile Service Inc., Charlotte, N. C., left March 17 for an extended European business trip. He will be in Holland for about a month to supervise initial operations of a new combed yarn spinning mill that his firm has engineered for clients there.

Joseph G. Wilmarth has been named chief industrial engineer for the three plants of Indian Head Mills at Cordova, Ala., Whitney, S. C., and Cheraw, S. C., with headquarters at Spartanburg, S. C.

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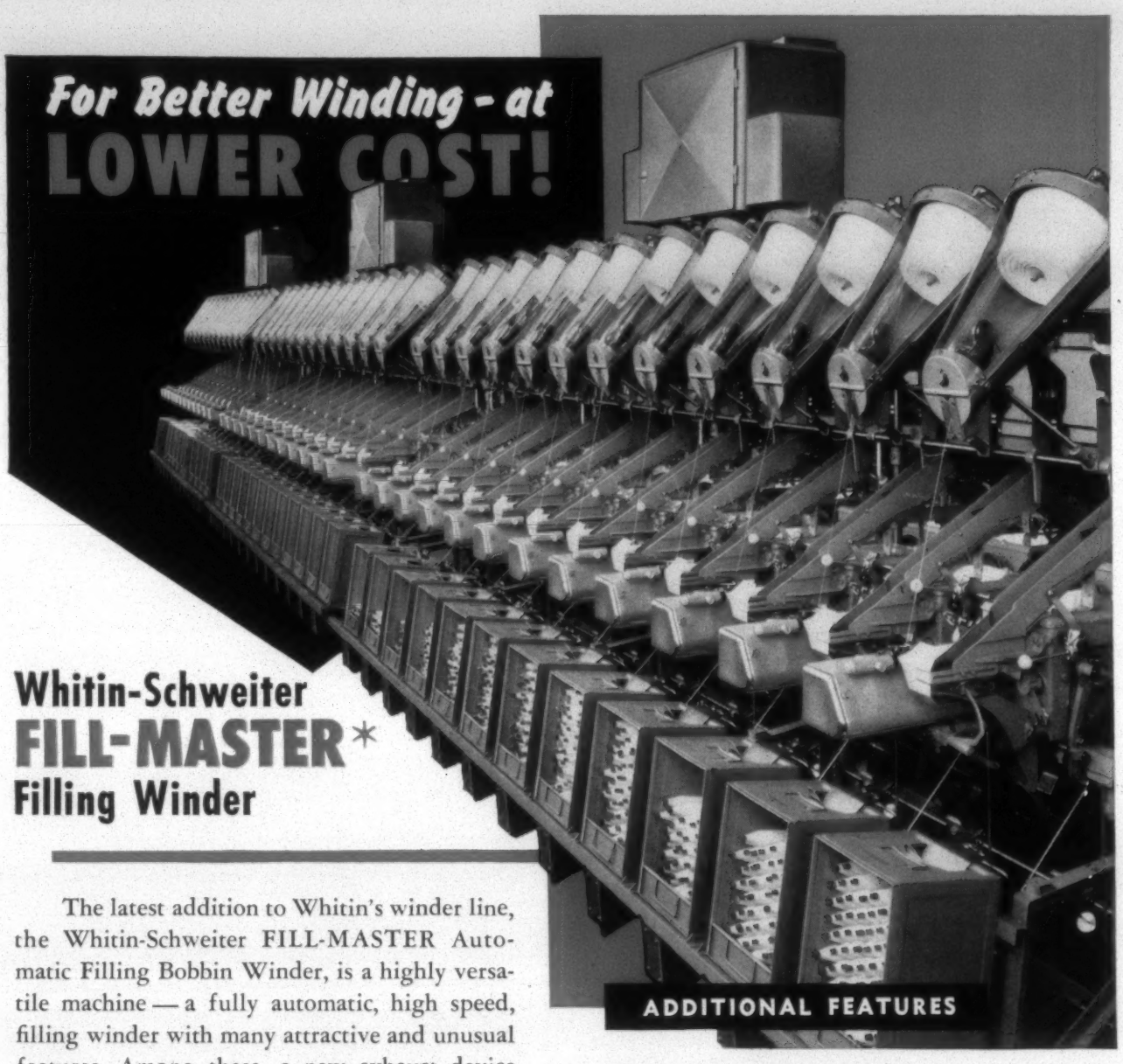

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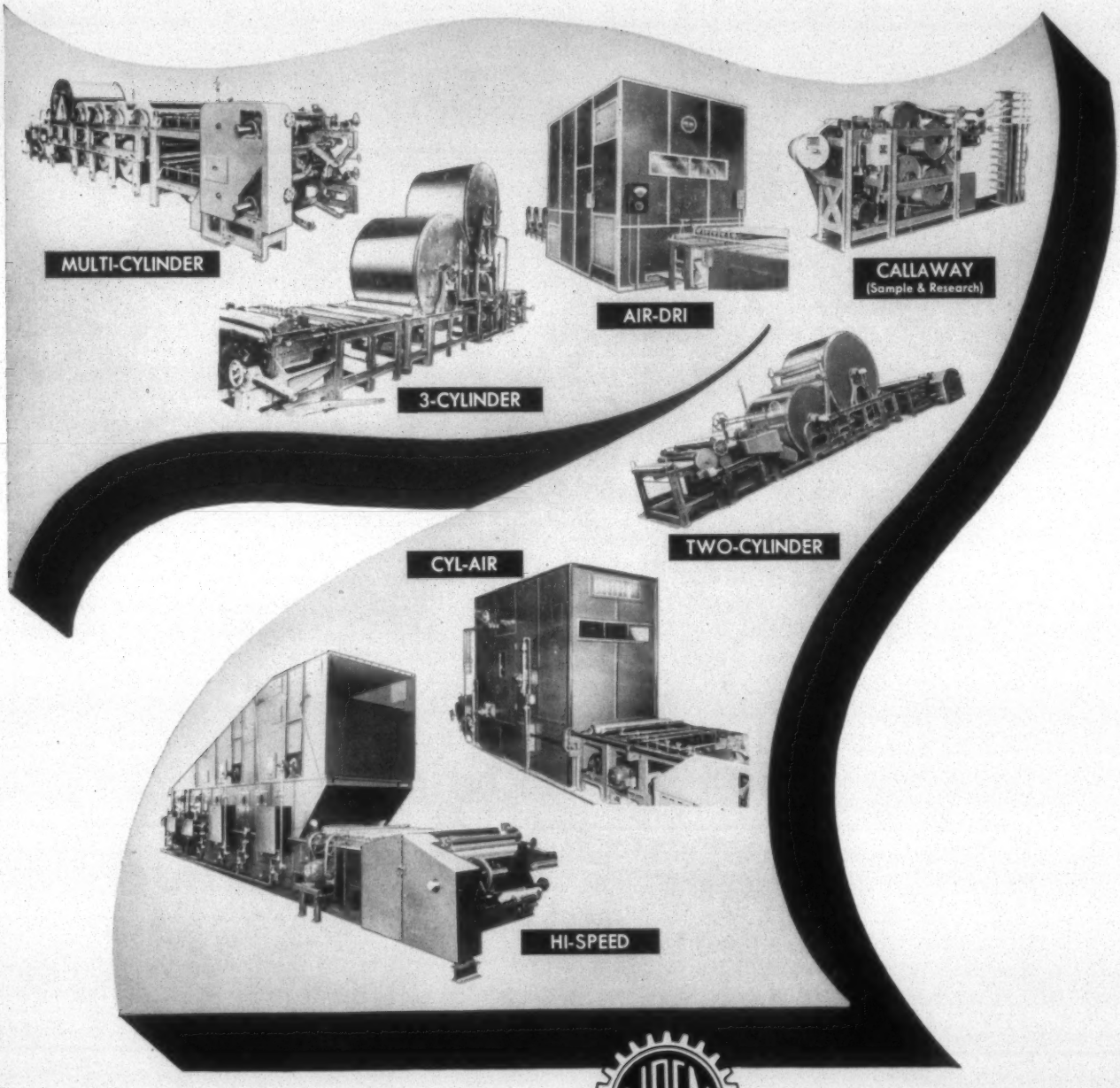

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